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WHITE SANDS

RESOURCE MANAGEMENT PLAN AMENDMENT/ ENVIRONMENTAL IMPACT STATEMENT

McGREGOR RANGE

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

LAS CRUCES DISTRICT

WHITE SANDS RESOURCE AREA

SEPTEMBER 1988

NOTICE

THIS DRAFT RESOURCE MANAGEMENT PLAN AMENDMENT (RMPA)/ ENVIRONMENTAL IMPACT STATEMENT (EIS) SHOULD BE RETAINED TO BE USED IN CONJUNCTION WITH THE PROPOSED RMPA/FINAL EIS. IF CHANGES RESULTING FROM PUBLIC REVIEW AND COMMENT ON THIS DRAFT ARE RELATIVELY MINOR, THE FINAL STATEMENT WILL NOT REPRODUCE THE DRAFT TEXT IN FULL; HOWEVER, THE FINAL STATEMENT WILL INCLUDE THE MODIFICATIONS AND CORRECTIONS WHICH SHOULD BE MADE TO THIS DRAFT AS A RESULT OF PUBLIC COMMENT, AS WELL AS A RECORD OF PUBLIC COMMENTS ON THIS DRAFT AND THE RESPONSES TO THOSE COMMENTS.

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BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 Marquess Street
Las Cruces, New Mexico 88005

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W452
1988

September 1988

Dear Reader:

Enclosed for your review and comment is the Draft White Sands Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS) for McGregor Range. This document describes and analyzes three alternatives for managing the military withdrawn public land within McGregor Range in Otero County, New Mexico. The purpose of this review is to improve the impact analysis and the decision-making process. We welcome your comments.

Written comments should be addressed to:

P. Robert Alexander, Area Manager
White Sands Resource Area
1800 Marquess Street
Las Cruces, NM 88005

DEC 19 1988

All written comments must be received no later than ~~January 3, 1989~~, in order to be considered in the Proposed RMPA/Final EIS.

Comments on the Draft RMPA/EIS may be submitted in writing or presented verbally at the scheduled public hearings. Oral comments will be accepted at the following public hearings:

Date	Time	City	Location
November 29, 1988	7:30 p.m.	El Paso, Texas	City Hall Basement Conference Room No. 2 Civic Center Plaza
December 1, 1988	7:30 p.m.	Alamogordo, NM	Chamber of Commerce 1301 White Sands Blvd.

A 10-minute time limit will be placed on oral comments. Oral comments should be accompanied by a written synopsis of the presentation. Written and oral comments will be fully considered and evaluated in preparation of the Proposed RMPA and Final EIS.

Sincerely,

H. James Fox

H. James Fox
District Manager

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DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DRAFT
WHITE SANDS RESOURCE MANAGEMENT PLAN AMENDMENT/ ENVIRONMENTAL IMPACT STATEMENT
for
McGregor Range

Abstract: This Draft White Sands Resource Management Plan Amendment (RMPA) and Environmental Impact Statement for McGregor Range describes and analyzes three alternatives for managing the 608,385 acres of withdrawn public land within McGregor Range in Otero County in south-central New Mexico. The need for this RMPA resulted from the passage of the Military Lands Withdrawal Act in 1986, which withdrew the land for military purposes. The three alternatives address to what degree public use of the resources will be allowed and the intensity of BLM resource management on McGregor Range. The three alternatives are: Alternative A (No Action), Alternative B, and Alternative C.

Type of action: (x) Administrative ( ) Legislative

For Further Information Contact: P. Robert Alexander
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1800 Marquess Street
Las Cruces, New Mexico 88005
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Comments have been requested from individuals, groups, and agencies shown on the partial distribution list in Chapter 5.

Date Draft Filed With Environmental Protection Agency: SEP 09 1988
Comments on Draft must be Received No Later Than: DEC 19 1988

Recommended:

District Manager
Las Cruces District Office
Las Cruces, New Mexico

Approved:

State Director
New Mexico

Colonel, US Army
Chief of Staff

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SUMMARY

SUMMARY

The Draft White Sands Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS) for McGregor Range explores future management options for the 608,385 acres of withdrawn public land within McGregor Range in Otero County in south-central New Mexico. The need for the RMPA resulted from the passage of the Military Lands Withdrawal Act in 1986, which withdrew the land for military purposes. The Draft RMPA/EIS is prepared as a single planning issue document to address to what degree public use of the resources will be allowed and the intensity of BLM resource management on McGregor Range. Three alternatives are considered in detail: Alternative A (No Action Alternative), Alternative B, and Alternative C. Alternative A (No Action Alternative) is the continuation of current management direction under existing land use plan decisions and the Memorandum of Understanding between the BLM and the Army. Alternative B permits resource use and development to a minimal extent which would result in low intensity public use. Alternative C places the highest priority on making public land and resources available for use and development by the public. The Preferred Alternative is Alternative C. The components of the three alternatives are summarized in Table S-1 and are further described in Chapter 2. The impacts anticipated from the alternatives are summarized in Table S-2 and are more fully described in Chapter 4.

TABLE S-1
SUMMARY OF ALTERNATIVES

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
LANDS	Acquire State land (920 acres) as per the White Sands RMP.	The 1957 withdrawal provided no specific direction whether the BLM has responsibility for issuing leases, easements, rights-of-way (ROWs) and other authorizations.	BLM would issue all public demand nonmilitary leases, easements, ROWs, and other authorizations only after Army concurrence.	BLM would issue all public demand nonmilitary leases, easements, ROWs, and other authorizations only after Army concurrence. BLM would be the lead agency for projects across both withdrawn and Army acquired lands. BLM would issue grants on withdrawn land and Army would issue grants on acquired land.
ACCESS	Closed generally to public access. Access authorized on a controlled basis.			
MINERALS		Locatables closed.	Locatables closed (with re-evaluation at least every 5 years).	Locatables closed (with re-evaluation at least every 5 years).
		Leasables closed.	BLM would issue oil, gas, and geothermal leases only after Army concurrence (45,760 acres).	BLM would issue oil, gas, and geothermal leases only after Army concurrence (100,000 acres).
		Salable materials disposal closed.	Conduct salable materials disposal (287,360 acres) only with Army concurrence.	Conduct salable materials disposal (287,360 acres) only with Army concurrence.

TABLE S-1
SUMMARY OF ALTERNATIVES (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WATERSHED		No watershed management plans would be developed.	Develop watershed management plans for areas with high erosion rates (86,450 acres).	Develop watershed management plans for areas with high erosion rates (48,200 acres).
		No monitoring studies for watershed would be conducted.	Conduct monitoring studies for watershed, in coordination with the Army.	Conduct monitoring studies for watershed, in coordination with the Army.
VEGETATION	BLM will manage Federal and State-listed, proposed, candidate, and sensitive plants as per law, regulations, and policy for nonmilitary activities. BLM will evaluate all non-military proposals for consistency with legal requirements and management objectives of special status species prior to issuance of permits or leases and initiation of work. Army will manage for military activities.	No prescribed burning would be conducted.	Consider identified areas for prescribed burning to improve rangeland condition.	Consider identified areas for prescribed burning to improve rangeland condition.
		Manage the four existing vegetation study sites as per the existing Cooperative Agreement (3,910 acres).	Manage the four existing vegetation study sites as per the existing Cooperative Agreement (3,910 acres).	Designate the four existing vegetation study sites as an ACEC to be managed as per the existing Cooperative Agreement (3,910 acres).
		No vegetation sale areas would be designated.	No vegetation sale areas would be designated.	Designate vegetation sale areas for landscaping and seed harvest (20,940 acres).
		No monitoring studies for vegetation would be conducted outside of the livestock grazing area.	Conduct monitoring studies for vegetation, in coordination with the Army.	Conduct monitoring studies for vegetation, in coordination with the Army.
LIVESTOCK GRAZING	Continue the existing livestock grazing program on McGregor Range.			

TABLE S-1
SUMMARY OF ALTERNATIVES (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE	Continue the existing forage use for wildlife within the livestock grazing area as per the White Sands RMP.	No vegetation would be reserved specifically for wildlife outside of the livestock grazing area.	Reserve adequate vegetation for wildlife outside of the livestock grazing area, in areas consistent with military missions.	Reserve adequate vegetation for wildlife outside of the livestock grazing area, in areas consistent with military missions.
	BLM will manage Federal and State-listed, proposed, candidate, and sensitive animals as per law, regulations, and policy for nonmilitary activities. BLM will evaluate all non-military proposals for consistency with legal requirements and management objectives of special status species prior to issuance of permits or leases and initiation of work. Army will manage for military activities.	Continue existing Co-Use Area Habitat Management Plan (HMP). The Mesa Grassland, Mesa Hill, and Arroyo Riparian habitat sites would continue to be included in the existing Co-use Area HMP. The Desert Hills and Outwash and Basin habitat sites would not be covered by an HMP. The existing Co-Use Area HMP objectives would not be revised.	Revise existing Co-Use Area HMP. Include the Mesa Grassland, Mesa Hill, Arroyo Riparian, Desert Hills and Outwash, and Basin habitat sites in the Otero Mesa Antelope HMP area. Management would be consistent with the military mission and activities.	Revise existing Co-Use Area HMP. Include the Mesa Grassland, Mesa Hill, Arroyo Riparian, Desert Hills and Outwash, and Basin habitat sites in the Otero Mesa Antelope HMP area. Management would be consistent with the military mission and activities.
		An HMP would not be developed for habitats outside of the livestock grazing area.	Develop a Tularosa Basin HMP to manage all habitats outside of the livestock grazing area for priority species. Management would be consistent with the military mission and activities.	Develop a Tularosa Basin HMP to manage all habitats outside of the livestock grazing area for priority species. Management would be consistent with the military mission and activities.

TABLE S-1
SUMMARY OF ALTERNATIVES (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE (Continued)		No additional monitoring studies for wildlife and wildlife habitat would be conducted.	Conduct monitoring studies for wildlife and wildlife habitat, in coordination with the Army.	Conduct monitoring studies for wildlife and wildlife habitat, in coordination with the Army.
		A Sikes Act Stamp program would not be established on McGregor Range.	Establish a Sikes Act Stamp program on McGregor Range.	Establish a Sikes Act Stamp program on McGregor Range.
		Within the livestock grazing area, the BLM would continue to conduct predator control through the District Animal Damage Control (ADC) Plan in coordination with Animal and Plant Health Inspection Service (APHIS) and New Mexico Department of Game and Fish (NMDGF). Outside of the livestock grazing area, the resp-sibility for predator control would continue to be with the Army in coordination with NMDGF and New Mexico Department of Agriculture (NMDA).	The BLM would authorize predator control through the District ADC plan in coordination with APHIS and NMDGF.	The BLM would authorize predator control through the District ADC plan in coordination with APHIS and NMDGF. Modify ADC Plan to manage take of target species and establish safety zones.
		Predator populations would not be inventoried and monitored.	Conduct inventories and monitor populations of predators.	Conduct inventories and monitor populations of predators.

TABLE S-1
SUMMARY OF ALTERNATIVES (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE (Continued)		Deer hunts would be coordinated with the Army Christmas shutdown periods with pronghorn and upland game hunting permitted during prescribed periods consistent with the Army mission.	Hunts would be consistent with resource capability and sustained yield during prescribed time periods consistent with the Army mission.	Hunts would be consistent with resource capability and sustained yield. Deer would be hunted during the Fort Bliss Christmas shutdown period. Pronghorn and upland game would be hunted during prescribed time periods consistent with the Army mission.
RECREATION		Deny public access for recreation purposes except for hunting during prescribed periods.	Provide public access for hunting during prescribed periods consistent with the Army mission.	Provide public access when hunting occurs during prescribed periods and for other controlled uses consistent with the Army mission.
		Provide for hunting during prescribed periods if game populations permit.	Provide for hunting during prescribed periods consistent with the Army mission if game populations permit.	Provide for hunting during prescribed periods consistent with the Army mission if game populations permit.
		When access is authorized, ORV use would be "limited to existing roads and trails" north of State Road 506 for the protection of watershed resources (116,000 acres).	When access is authorized, ORV use would be "limited to designated roads and trails" for the public safety and the protection of watershed resources and cultural resources.	When access is authorized, ORV use would be "limited to designated roads and trails" for the public safety and the protection of watershed resources and cultural resources.
		The Escondida Pueblo site would continue to be designated as "limited to existing roads and trails" for ORV use.	The Escondida Pueblo site (40 acres) would be designated as "closed" to ORV use.	The Escondida Pueblo site (40 acres) would be designated as "closed" to ORV use.

TABLE S-1
SUMMARY OF ALTERNATIVE (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
VISUAL RESOURCES	Manage visual resources as per Visual Resource Management (VRM) guidelines.			
WILDERNESS	Manage the Culp Canyon Wilderness Study Area (WSA) as per Interim Management Policy (IMP) guidelines pending Congressional determination.			
CULTURAL RESOURCES	BLM will conduct cultural resource clearances for all nonmilitary land disturbing projects prior to final project approval as per law, regulations, and policy. Army will conduct clearances for military activities. BLM will conduct a random survey to inventory cultural resources. (This would contribute toward implementation of the decision in the White Sands RMP to inventory 10 percent of the Resource Area.)	The Escondida Pueblo site would remain unfenced. The Army would continue to issue research permits to institutions or organizations for the collection, recovery, and analysis of cultural data.	Fence Escondida Pueblo site to exclude livestock and other surface-disturbing uses (40 acres). The BLM would issue research permits to institutions or organizations for the collection, recovery, and analysis of cultural data.	Fence Escondida Pueblo site to exclude livestock and other surface-disturbing uses (40 acres). The BLM would issue research permits to institutions or organizations for the collection, recovery, and analysis of cultural data.

TABLE S-1
SUMMARY OF ALTERNATIVES (Concluded)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
CULTURAL RESOURCES (Continued)	BLM will develop Cultural Resource Management Plans (CRMPs) for prehistoric and historic sites as per the White Sands RMP.			
FIRE		BLM has responsibility to suppress and monitor all nonmilitary fires except in impact and military use areas. Army has responsibility to suppress or monitor all fires in impact and military use areas and all fires caused by military activities. No prescribed burning would be conducted.	BLM has responsibility to suppress and monitor all nonmilitary fires except in impact and military use areas. Army has responsibility to suppress or monitor all fires in impact and military use areas and all fires caused by military activities. BLM could use prescribed fire in identified areas (220,800 acres) to improve rangeland condition and wildlife habitat.	BLM has responsibility to suppress and monitor all nonmilitary fires except in impact and military use areas. Army has responsibility to suppress or monitor all fires in impact and military use areas and all fires caused by military activities. BLM could use prescribed fire in identified areas (220,800 acres) to improve rangeland condition and wildlife habitat.

NOTE: a/ Common to all alternatives.

TABLE S-2
SUMMARY OF IMPACTS

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
LANDS	The acquistion of State land within McGregor Range would create a more manageable land ownership pattern.	Lack of specific direction on who issues land use authorizations on McGregor would cause confusion as to delegation of authority.	BLM would issue all nonmilitary land use authorizations. Records would be noted for management enhancement.	BLM would issue all nonmilitary land use authorizations. Records would be noted for management enhancement. Military issues grants on Army acquired lands.
ACCESS	The closure to public access via State Road 506 on a controlled basis could inconvenience the year-round residents of Timberon.			
MINERALS	Decisions associated with continued management actions have no significant impacts on the minerals program.	The actions associated with the No Action Alternative would have no significant impacts on the minerals program.	Proposals associated with Alternative B would have no significant impacts on locatable minerals. Continued closure of locatable minerals would limit the amount of locatable minerals available.	Proposals associated with Alternative C would have no significant impacts on locatable minerals. Continued closure of locatable minerals would limit the amount of locatable minerals available.
	Acquiring 920 acres of State-owned mineral and surface estate would benefit the management of minerals.		Oil and gas leasing and development would be affected by rights-of-way (ROWs), visual resource management (VRM), wildlife management, and mineral materials disposal stipulations imposed by the Army.	Oil and gas leasing and development would be affected by ROWs, VRM, wildlife management, and mineral materials disposal stipulations imposed by the Army.
			Disposal of mineral materials would be affected by actions such as oil and gas development, ROWs, and use authorizations such as maintenance and construction of transportation routes. VRM, cultural, wildlife, and Army restrictions and requirements could place hardships on extraction locations and methods of disposal.	Disposal of mineral materials would be affected by actions such as oil and gas development, ROWs, and use authorizations such as maintenance and construction of transportation routes. VRM, cultural, wildlife, and Army restrictions and requirements could place hardships on extraction locations and methods of disposal.
AIR, SOIL, AND WATER RESOURCES	There would be no significant impact to air quality as a result of continuing management actions.	Without watershed management plans and monitoring studies, there would be no way of tracking any changes in soil erosion and sedimentation.	Since BLM would issue all nonmilitary land use authorizations, mitigating measures would be established to minimize any impacts.	Since BLM would issue all nonmilitary land use authorizations and is the lead agency for projects across both withdrawn and military lands, mitigating measures would be established to minimize any impacts caused by surface disturbing activities.
	Approximately 10 acres per year would be disturbed by continuing management actions. The overall impact to soil and water resources would be minimal.	Limiting ORV use north of State Road 506 would continue to minimize the amount of surface disturbance in that area.	Mitigating measures would be established to minimize impacts caused by any oil, gas and geothermal leasing activities and salable materials disposal.	Mitigating measures would be established to minimize impacts caused by any oil, gas and geothermal leasing activities and salable materials disposal.
			Watershed management plans would be established for 86,450 acres. Mechanisms would be established to reduce and stabilize areas showing high soil erosion and sedimentation.	Watershed management plans would be established for 48,200 acres. Mechanisms would be implemented to reduce and stabilize areas showing soil erosion or sedimentation.
			Soil erosion problems would be monitored and documented over the entire Range.	

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
AIR, SOIL, AND WATER RESOURCES (Continued)			Approximately 220,800 acres have been identified for possible prescribed burning. Removal of some vegetation may result in some short-term soil loss. Limiting ORV use would minimize the amount of surface disturbing activities, which in turn would minimize soil loss and gully establishment.	Soil erosion problems would be monitored and documented over the entire Range. Approximately 220,800 acres have been identified for consideration for prescribed burning. Removal of some vegetation may result in some short-term soil loss. Limiting ORV use would minimize the amount of surface disturbing activities, which in turn would minimize soil loss and gully establishment.
VEGETATION	Continuing management actions would cause short-term disturbance of approximately 10 acres of vegetation per year.	Vegetation loss in relation to soil erosion due to water and air movement would not be monitored. No prescribed burning of certain plant species would not allow for the removal of old vegetation. The four study sites would continue to provide valuable agricultural information in reference to pristine black grama grassland. Limiting ORV use north of State Road 506 would continue to help minimize vegetation disturbance in that area.	Since BLM would issue all non military land use authorizations, mitigating measures would be established to minimize the impacts to vegetation caused by surface disturbing activities. On oil, gas, and geothermal leases, and in areas of disposal of salable materials, short-term effects would be vegetation removal and disturbance while the long-term effects would be vegetation reclamation of the disturbed areas.	Since BLM would issue all nonmilitary land use authorizations and is the lead agency for projects across both withdrawn and Army lands, mitigating measures would be established to minimize the impacts to vegetation caused by surface disturbing activities. Vegetation removal and disturbance may occur in the short-term as a result of activities caused by oil, gas, and geothermal leases, and disposal of salable materials. Long-term effects would be vegetation reclamation.
			Watershed management plans would be developed on 86,450 acres. Mechanisms would be used to prevent the loss of vegetation. Rehabilitation of areas showing vegetation disturbance, destruction, and losses caused by natural conditions or human activity would be enhanced through monitoring and documentation of problems over the entire Range. 220,800 acres are identified for possible prescribed burning. Removal of old vegetation would result in the increase in quanity and quality of certain vegetation species.	Watershed management plans would be developed on 48,200 acres. Mechanisms would be used to help prevent the loss of vegetation. Rehabilitation of areas showing vegetation disturbance, destruction, and losses caused by natural conditions or human activity would be enhanced through monitoring and documentation of problems over the entire Range. Prescribed burning has been identified for consideration on 220,800 acres. Removal of old vegetation would result in quantity and quality of certain species.

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
VEGETATION (Continued)			The four vegetation study sites would continue to provide valuable agricultural information in reference to pristine black grama grassland. Vegetation disturbance would be held to a minimum with the limitation of off-road vehicle (ORV) use to designated roads and trails.	The four vegetation study sites would be designated as an ACEC. These protected areas would provide valuable agricultural information in relation to black grama grassland in a pristine environment. Area of Critical Environmental Concern (ACEC) designation would highlight the significant resource qualities of the sites. Vegetation sale areas would be designated on 20,940 acres. Mitigating measures would be established to minimize any impacts caused by surface disturbing activities. Removal of certain plant species would allow for other vegetation species to better utilize available space and water. Limiting ORV use to designated roads and trails would help minimize vegetation disturbance.
LIVESTOCK GRAZING	Livestock grazing will continue in the livestock grazing area and existing decisions for livestock grazing on McGregor Range will continue to be implemented. The implementation of rangeland improvements would improve livestock distribution, increase total AUMs, improve livestock weight gains, and improve livestock condition.	Vegetation losses would not be documented without any watershed management plans and monitoring studies. Without the use of prescribed burning, wolf plants would continue to increase in density. Livestock distribution patterns would also continue to be uneven without the use of fire.	Since BLM would issue all nonmilitary land use authorizations, mitigating measures would be established to correct impacts caused by surface disturbing activities. Short-term effects on surface disturbing activities caused by oil, gas, and geothermal leases and salable materials disposal would be loss of forage species, while the long-term effects would be the reclamation of disturbed sites. Watershed management plans would be developed for 86,450 acres. Mechanisms would be implemented to reduce and stabilize the loss of livestock forage. Monitoring studies would be established to help identify areas showing problems with soil erosion. Loss of vegetation could result in the reduction of AUMs and poor livestock distribution.	Since BLM would issue all nonmilitary use authorizations and is the lead agency for projects across both withdrawn and Army lands, mitigating measures would be established to minimize impacts caused by surface disturbing activities. Oil, gas, and geothermal leasing activities and salable materials disposal would result in some loss of forage species in the short-term. Long-term effects would be vegetation reclamation. Watershed management plans would be developed for 48,200 acres. Mechanisms would be implemented to stabilize and reduce livestock forage loss. Monitoring studies would be established to help identify and stabilize areas showing high soil losses. Loss of vegetation could result in the reduction of AUMs and poor livestock distribution.

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING (Continued)			220,800 acres of vegetation are identified for possible prescribed burning. Removal of old plant growth would promote quantity and quality growth of certain forage species. Rehabilitation of areas showing vegetation disturbance, destruction, and losses caused by natural conditions or human activity would be enhanced through monitoring and documentation of problems. Predator populations would be monitored and kept at a level so as to avoid excessive livestock losses.	Approximately 220,800 acres of vegetation are identified for possible prescribed burning. Removal of old forage growth would result in the growth of more palatable and vigorous species for livestock consumption. The four black grama grass study sites would be designated as an ACEC and would be managed as per the existing Cooperative Agreement between the BLM, NMSU, and the Army. These areas would provide useful agricultural data for livestock grazing. Vegetation sale areas would be designated on 20,940 acres. Short-term effects would be vegetation removal. Long-term effects would be reclamation of the disturbed areas. Forage species could better compete for available space and water. Rehabilitation of areas showing vegetation disturbance, destruction, and losses caused by natural conditions or human activity would be enhanced through monitoring and documentation of problems over the entire Range. Predator populations would be monitored and kept at a level so as to avoid excessive livestock losses. Providing public access for occasional controlled recreation uses could result in an increase in vandalism problems. Some of these problems include opening and closing valves, removing floats off of drinking troughs and storages, and leaving fence gates open.

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE	Issuance of ROWs would cause 1 acre of habitat modification. Animal disturbance on 485 to 2,560 acres of habitat. Unknown decrease in big game populations.	Land actions would result in potential adverse impacts to wildlife and threatened and endangered species (T/E) due to unclear management authority. Potential for lost mitigation and failure to comply with Endangered Species Act (ESA).	Lands actions would present little likelihood of missing mitigation opportunities or noncompliance with ESA.	Lands actions would present little likelihood of missing mitigation opportunities or noncompliance with ESA.
	Controlled public access would be a slight benefit to habitat populations due to reduced disturbance.	Continued closure of minerals entry would provide for continuation of present levels of disturbance and habitat modification.	Potential negative impacts to wildlife and endangered species resources due to opening of salable and leasable minerals.	Potential negative impacts to wildlife and endangered species resources due to opening of salable and leasable minerals.
	Management of livestock grazing would increase available forage for big game 36 percent. Ninety-seven acres of habitat would be eliminated and decreased ecological condition of 4,425 acres would occur. This would be detrimental to T/E species including any future recovery efforts for Aplomado falcon.	There would be no opportunity to improve wildlife habitat through intensive management of watershed problem areas.	Watershed management would improve wildlife habitat quality on 86,450 acres of McGregor Range.	Watershed management would improve wildlife habitat quality on 48,200 acres of McGregor Range.
		Preclusion of prescribed burning would prevent cost-effective establishment or re-establishment of habitat conditions beneficial to wildlife species.	Proper use of fire would benefit wildlife species and habitats if management goals are compatible.	Proper use of fire would benefit wildlife species and habitats if management goals are compatible.
	Generally, there would be adverse impacts to wildlife through establishment of livestock projects due to increased disturbance of animals and increased use of currently little used portions of pastures. Additional water availability would benefit most birds and mammals.	Management of the four grassland study sites under the existing MOU would ensure the continuation of these habitats and provide for research valuable in managing these habitats for wildlife.	Continued management of the four grassland study sites under the existing MOU would ensure continuation of these habitats and provide for research valuable in managing these habitats for wildlife.	Designation of the four grassland study areas as an ACEC would provide little change over the existing management levels; however, management strategies would be locked in tighter and would be more visible to the public.
	Yearly projects for wildlife would have overall beneficial impacts for wildlife due to improved nesting, feeding habitat, and reduced restriction of movement.	No vegetation sale areas would maintain existing levels of disturbance of habitat. Plants and seed sources used by wildlife would be maintained.	No vegetation sale areas would maintain existing levels of disturbance of habitat. Plants and seed sources used by wildlife would be maintained.	Establishment of vegetation sales would cause removal of specific species of plants and seeds from certain grasses used by wildlife.
	Generally minor impacts from fencing or excavation are expected due to cultural management.	No vegetation monitoring would have a significant impact on wildlife and wildlife habitat. There would be no identification of specific problems pertaining to grazing or plant communities outside of the grazing areas.	Vegetation monitoring would provide information on existing plant communities and grazing problems that would affect wildlife and habitat. Solutions could be formulated using these data.	Vegetation monitoring would provide information on existing plant communities and grazing problems that would affect wildlife and habitat. Solutions could be formulated using these data.
		Without reservation of forage for wildlife outside of the livestock grazing area, the needs of food and cover by wildlife would not be identified to other resource uses.	Wildlife needs for food and cover would be identified to other resource uses through the reservation of forage for wildlife outside of the livestock grazing area.	Wildlife needs for food and cover would be identified to other resource uses through the reservation of forage for wildlife outside of the livestock grazing area.

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE (Continued)		Management of pronghorn antelope and their habitat on McGregor Range would not be included in the Otero Mesa HMP. Management would not be under an ecological unit, but split between two plans. One area would not receive management.	All occupied pronghorn antelope habitat on McGregor Range would be included under the Otero Mesa HMP. Management would be for the ecological unit.	All occupied pronghorn antelope on McGregor Range would be included under the Otero Mesa HMP. Management would be for the entire ecological unit.
		The Co-use Area HMP would be continued as is.	The Co-use Area HMP would be revised to reflect changes in wildlife management needs.	The Co-use Area HMP would be revised to reflect changes in wildlife management needs.
		There would be no HMP or intensive management of wildlife habitat outside of the livestock grazing area.	A Tularosa Basin HMP would provide for intensive management of wildlife and habitat outside of the livestock grazing area.	A Tularosa Basin HMP would provide for intensive management of wildlife and habitat outside of the livestock grazing area.
		Without monitoring of wildlife habitat and population conditions there would be no way to identify problems or determine the effectiveness of management actions for wildlife or from other programs.	Wildlife monitoring would provide a means to identify problems with habitat and populations and to trace the effects of management actions for wildlife or from other programs.	Wildlife monitoring would provide a means to identify problems with habitat and populations and to trace the effects of management actions for wildlife or from other programs.
		There would be no additional funding to accomplish wildlife management without use of the Sikes Act.	Additional funding would be available to accomplish wildlife management with the use of Sikes Act programs.	Additional funding would be available to accomplish wildlife management with the use of Sikes Act programs.
		There would be little opportunity for BLM to become involved with and influence ADC as a management tool for biological resources on McGregor. There would be little BLM influence on operation of the ADC program for target/nontarget species. BLM would have little idea of the influence of ADC activities on predator populations and other wildlife species and resource uses.	There would be little opportunity for BLM to become involved with ADC except that monitoring of predator populations would occur and the effects of control on wildlife and resource uses would be better understood.	BLM would become involved with the entire ADC program on McGregor Range. Monitoring would provide data on predator populations and the impacts of predators on other resources would be tracked. Therefore, the use of ADC (use or non-use) would become a tool for achieving specific resource goals. The take of non-target animals would be tracked and minimized where needed.
		There would be little consideration for the biological needs of game species when scheduling hunts. Hunts would continue to be scheduled even if detrimental to wildlife welfare unless halted by BLM or NMDGF.	The biological needs of game species are considered when establishing hunts. Hunting would be consistent with resource capability and sustained yield and based on research, modeling, and principles of sound wildlife management in addition to coordination with the military mission.	The biological needs of game species are considered when establishing hunts. Hunting would be consistent with resource capability and sustained yield and based on research, modeling, and principles of sound wildlife management in addition to coordination with the military mission.
		Recreation use limited to hunting would minimize disturbance of habitats and wildlife.	Providing for prescribed hunting provides efficient means of population control on wildlife species while also minimizing to the extent possible disturbance of habitat and wildlife.	Providing for controlled public recreation and prescribed hunting provide efficient means of population control on wildlife species while also minimizing to the extent possible disturbance of habitat and wildlife.

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE (Continued)		Impacts of limiting ORV would be to minimize habitat and wildlife disturbance on that area north of State Road 506.	Impacts of limiting ORV on all of McGregor would be to minimize habitat and wildlife disturbance on the entire Range.	Impacts of limiting ORV on all of McGregor would be to minimize habitat and wildlife disturbance on the entire Range.
			Minor disturbance would occur, and also minor benefit due to exclosure of Escondida for cultural resource management purposes.	Minor disturbance would occur, and also minor benefit due to exclosure of Escondida for cultural resource management purposes.
RECREATION	Access is closed to the public except during prescribed periods. Recreational opportunities are severely curtailed because they would interfere with the military mission.	Public access for recreation purposes would continue to be denied, except during prescribed periods when the public would be allowed access for hunting.	Public access would be allowed for hunting during prescribed periods.	Public access would be allowed when hunting occurs during prescribed periods and for other controlled uses.
		Implementation of the Co-use HMP could have an impact to hunting activity by increasing hunting opportunities.	Hunting opportunities would probably be enhanced or benefit from the revision of the existing Co-use HMP and the development of HMPs to include all habitats.	Hunting opportunities would probably be enhanced or benefit from the revision of the existing Co-use HMP and the development of HMPs to include all habitats.
VISUAL RESOURCES	An estimated 10 acres per year would be impacted by various surface disturbing activities. The most noticeable effects to visual resources would be associated with linear ROWs.	Some minor impacts to visual resources could occur from projects associated with implementation of the Co-use area HMP.	Minor impacts could occur from projects associated with HMP implementation.	Minor impacts could occur from projects associated with HMP implementation.
		Limiting ORV use north of State Road 506 would continue to minimize the potential for additional surface disturbance in that area.	Limiting ORV use would lessen the potential for additional surface disturbance on the Range.	Limiting ORV use would lessen the potential for additional surface disturbance on the Range.
CULTURAL RESOURCES	Actions and activities of other BLM programs which are common to all alternatives will be conducted in accordance with all laws, regulations, and guidelines to result in a determination of no affect or no adverse affect upon cultural resources.	No specific direction as to who issues land use authorizations could have a negative effect on cultural resources.	BLM issuance of all non-military land use authorizations would have a positive effect on cultural resources.	BLM issuance of all non-military land use authorizations and BLM's being the lead agency for projects across both withdrawn and Army land would result in a positive effect on cultural resources.
	Access control can directly protect cultural resources and have a positive effect, if access is effectively controlled. Impacts upon cultural resources would not increase as a result of continuing BLM management activities, and sufficient safeguards exist to ensure no adverse effects upon the resources.	Ground disturbing activities would result in the location and subsequent mitigation of impacts/protection of cultural resources. Activities which would not cause ground disturbance would result in no direct damage to cultural resources, but fewer sites may be identified due to the lack of cultural clearances.	Ground disturbing activities would result in the location and subsequent mitigation of impacts/protection of cultural resources. Activities which would not cause ground disturbance would result in no direct damage to cultural resources, but fewer sites may be identified due to the lack of cultural clearances.	Ground disturbing activities would result in the location and subsequent mitigation of impacts/protection of cultural resources. Activities which would not cause ground disturbance would result in no direct damage to cultural resources, but fewer sites may be identified due to the lack of cultural clearances.
		Limiting ORV use to existing roads and trails north of State Road 506 would continue to limit access and minimize damage to cultural resources in that area.	Limiting ORV use to designated roads and trails would limit access and damage to cultural resources.	Limiting ORV use to designated roads and trails would limit access and damage to cultural resources.

TABLE S-2
SUMMARY OF IMPACTS (Continued)

RESOURCE	CONTINUING MANAGEMENT GUIDANCE a/	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C
CULTURAL RESOURCES (Continued)		Continued ORV use and not fencing the Escondida Site would result in continued damage to the site.	Fencing and closing Escondida Site to ORV use would restrict access and protect the site. BLM issuance of research permits would have a positive impact on management of cultural resources.	Fencing and closing Escondida Site to ORV use would restrict access and protect the site. BLM issuance of research permits would have a positive impact on management of cultural resources.
SOCIAL AND ECONOMIC CONDITIONS	Generally closed public access would continue to affect residents, ranchers, and recreationists through road closures. Livestock grazing allotments would continue to be leased under open bid. Indirect impacts may occur if construction of pipelines, reservoirs, and wells occurs.	The continued closure of mineral leasing and sales would cause the State, County, and Army to haul in needed minerals for road repair. Some people favor the continued closure of mining to minimize visual scars and effects on wildlife. There is both support and opposition to vegetation sales; no vegetation sales would help preserve native plant species but may limit supply. Predator control supported for livestock protection; opposed due to lack of analysis. Denying public recreation is opposed by the public; hunting is favored. Restricting ORV use is supported by the public.	Roles would be clarified for the public as to who issues land use authorizations. The continued closure of locatables is supported by some members of the public because they feel it would minimize visual scars. The continued closure may limit the amount of locatable minerals available. Oil and gas, and geothermal leasing is supported by people who would like to lease the area. Leasing is opposed by some because of effects to wildlife and visual scars. There is both support and opposition to vegetation sales; no vegetation sales would help preserve native plant species but may limit supply. The Sikes Act Program may be opposed by hunters who must pay a higher fee and supported by people because of wildlife benefits. Greater BLM control over predators may be supported by the people who are against predator control. Allowing hunts on the Range is supported by the public. Denying recreation other than hunting on the Range would be opposed by recreationists. Restricting ORV use is supported by the public.	Roles would be clarified for the public as to who issues land use authorizations. The continued closure of locatables is supported by some members of the public because they feel it would minimize visual scars. The continued closure may limit the amount of locatable minerals available. Oil and gas, and geothermal leasing is supported by people who would like to lease the area. Leasing is opposed by some because of effects to wildlife and visual scars. ACEC designation for the vegetation study sites is supported by the public. There is both support and opposition to vegetation sales; vegetation sales may increase supply, but would reduce native plant species. The Sikes Act Program may be opposed by hunters who must pay a higher fee and supported by people because of wildlife benefits. Greater BLM control over predators may be supported by the people who are against predator control. Those in favor may oppose because it may slow the control process. Allowing hunts on the Range is supported by the public. Ocassional controlled access for recreation is supported by the public. The public is in support of restricting ORV use to designated roads for protection of watershed and cultural sites.

NOTE: a/ Common to all alternatives.

CHAPTER 1

INTRODUCTION

CHAPTER 1

INTRODUCTION

PURPOSE AND NEED

The purpose of this document is to consider amending the White Sands Resource Management Plan (RMP) (BLM 1986) for McGregor Range. The need for the RMP Amendment (RMPA) resulted from the passage of the Military Lands Withdrawal Act in 1986 (see Appendix A for the complete text). This RMPA/EIS is being prepared in accordance with the Federal Land Policy and Management Act (FLPMA), the National Environmental Policy Act (NEPA), the BLM's planning regulations (43 Code of Federal Regulations [CFR] 1600), and the Council on Environmental Quality (CEQ) regulations (40 CFR 1500).

Since 1957 McGregor Range has been controlled by the Department of the Army (DOA), Fort Bliss, Texas. The Range is used for artillery and missile firing, desert maneuvers, and other military purposes. In 1966 DOA designated a portion of the Range as a Co-use area, in which livestock grazing could be permitted under supervision of the Bureau of Land Management (BLM) according to the terms of a Memorandum of Understanding (MOU) between the DOA and BLM. In 1976 an amendment was signed by the DOA and BLM, which amended part of the 1966 MOU. In 1974 a cooperative agreement between DOA, BLM, Fish and Wildlife Service (FWS), and the New Mexico Department of Game and Fish (NMDGF) was signed for the purpose of protecting, developing, and managing the fish and wildlife resources on the Co-use area of McGregor Range. The BLM and the Army agreed to modify it in 1976.

On November 6, 1986, the Military Lands Withdrawal Act of 1986 (Public Law [PL] 99-606) (see Appendix A), withdrew the land for military purposes. The following excerpt from Section 3 of the Act describes how the withdrawn lands will be managed.

> "(a) MANAGEMENT BY THE SECRETARY OF THE INTERIOR -
>
> (1) During the period of the withdrawal, the Secretary of the Interior shall manage the lands withdrawn under section 1 (except those lands within a unit of the National Wildlife Refuge System) pursuant to the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) and other applicable law, including the Recreation Use of Wildlife Areas Act of 1962 (16 U.S.C. 460k et seq.), and this act. * * *
>
> (2) To the extent consistent with applicable law and Executive orders, the lands withdrawn under section 1 may be managed in a manner permitting -
>
> (A) the continuation of grazing pursuant to applicable law and Executive orders where permitted on the date of enactment of this Act;
>
> (B) protection of wildlife and wildlife habitat;
>
> (C) control of predatory and other animals;
>
> (D) recreation; and
>
> (E) the prevention and appropriate suppression of brush and range fires resulting from nonmilitary activities.
>
> (3)(A) All nonmilitary use of such lands, other than the uses described in paragraph (2), shall be subject to such conditions and restrictions as may be necessary to permit the military use of such lands for the purposes specified in or authorized pursuant to this Act.
>
> (B) The Secretary of the Interior may issue any lease, easement, right-of-way, or other authorization with respect to the nonmilitary use of such land only with the concurrence of the Secretary of the military department concerned."

In addition, the BLM Director has provided the following guidance from the Washington Office (Instruction Memorandum 87-307, March 4, 1987). As a minimum, the management plan must:

- recognize that the lands are reserved for military uses and recognize other uses specified in PL 99-606;
- be done in concert with the military;
- use the flexibility of 43 CFR 1600 to keep planning streamlined;

- be tailored to local circumstances through the scoping process;

- be limited to resources and uses under the Bureau's administration and control;

- be limited by conditions and restrictions necessary to permit military uses of the lands for the purposes stated in the law;

- amend and add to existing BLM plan, and/or utilize plans, land use analyses, and EIS's of other agencies as much as possible; and

- specify decisions to the maximum extent practical and minimize the preparation of more specific activity plans.

Section 3(b) requires the Secretary of the Army to determine which lands require closure to public use due to military operations, public safety, or National security. Prior to initiating formal planning, the Commander was consulted to discuss closure to public uses and limitations on other resource management activities. Documentation of these determinations was obtained from the Army.

Documentation from the Commander also included identification of lands which may be considered suitable for opening for mineral activity in accordance with Section 12 of the Act.

LOCATION

McGregor Range is located in Otero County in south-central New Mexico (see Map 1-1). McGregor Range is bordered by the Texas-New Mexico state line on the south, the Lincoln National Forest on the north, and U.S. Highway 54 on the west. Public and State-owned lands adjoin the east side. Land ownership within the Range includes 608,385 acres of withdrawn public land, 71,083 acres of Army acquired land, and 920 acres of State land.

PLANNING PROCESS

The planning process is designed to enable BLM to address the issues and concerns of the public while complying with the laws and policies established by Congress and the Executive Branch of the Federal Government. The White Sands RMPA/EIS process involves nine basic actions and emphasizes the role of public participation at several key stages. The nine planning actions are as follows:

- Identification of Issues
- Development of Planning Criteria
- Inventory and Data Collection
- Analysis of Management Situation
- Formulation of Alternatives
- Estimation of Effects of Alternatives
- Selection of Preferred Alternative
- Selection of Plan Amendment
- Monitoring and Evaluation

Identification of Issues

An amendment to the existing White Sands RMP is being prepared as a single planning issue document with the EIS to address to what degree public use of the resources will be allowed and the intensity of BLM resource management on McGregor Range. This issue was developed by BLM managers and specialists together with the public, other Federal agencies, and State and local Governments for the planning effort.

Development of Planning Criteria

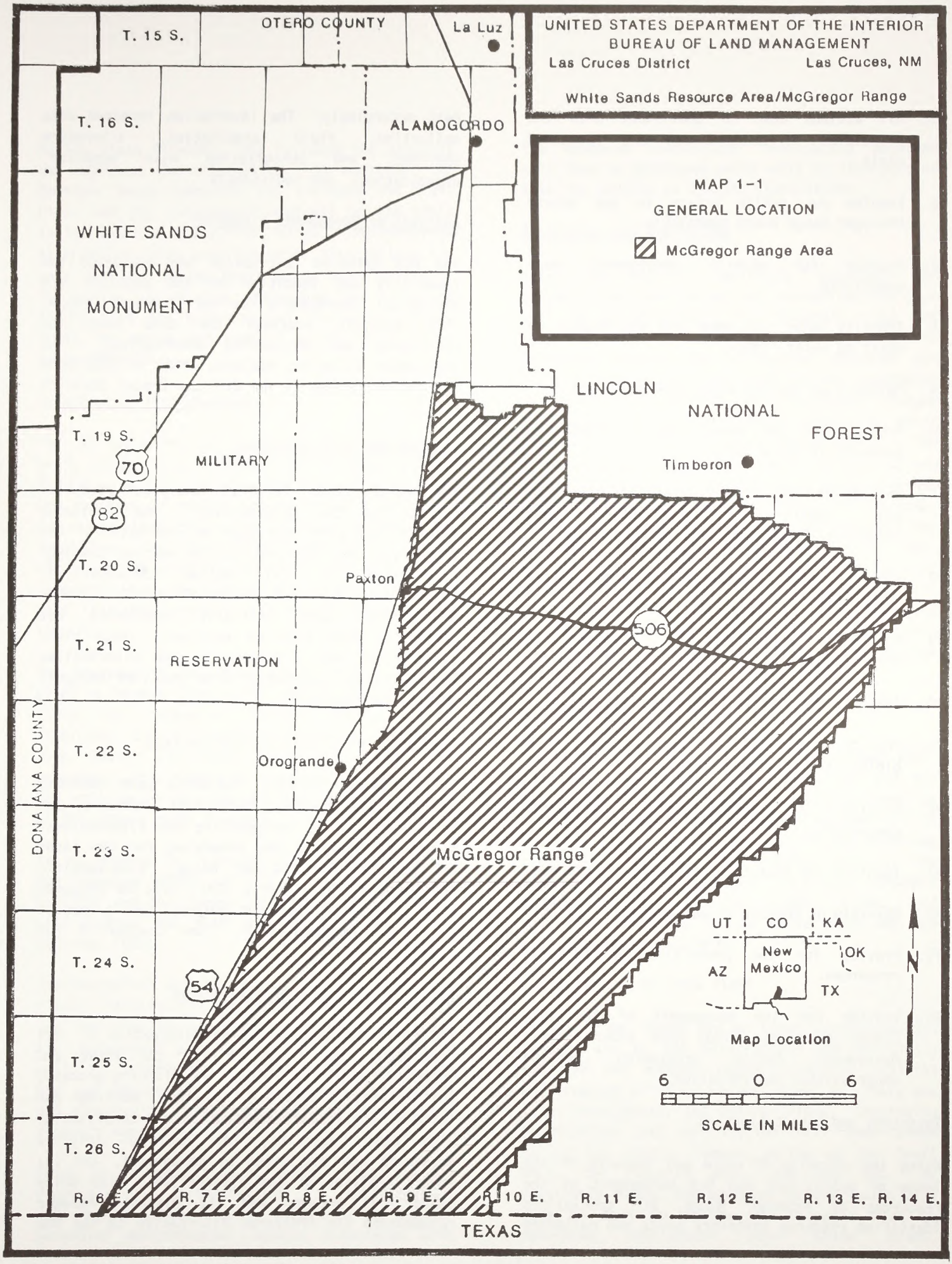
After the issue was identified, planning criteria were developed to guide this RMPA. The criteria were developed from laws, executive orders, regulations, planning principles, National and BLM State guidance, public involvement, and resource information. The criteria helped to set the standards for data collection, to establish alternatives to be examined, and to select the preferred alternative and final plan. Planning criteria ensure that the plan is tailored to the issue and that unneeded data collection and analysis are avoided. The following are planning criteria which were used in preparation of the White Sands RMPA/EIS for McGregor Range:

1. Actions must comply with laws, executive orders, and regulations including PL 99-606.

2. Provide for military use.

3. Clarify BLM's management responsibilities on McGregor Range.

4. In each action, the resource outputs must be reasonable and achievable with available technology and budget constraints.



Source: Las Cruces District Office Files, 1988.

5. All actions must be consistent with the principles of multiple-use and sustained yield.

6. Provide for public access to and across McGregor Range where compatible.

7. Provide for mineral development were compatible.

8. Identify water use needs and any impacts on existing water rights.

9. Maintain or improve vegetation condition.

10. Provide for the harvesting of vegetation products if compatible.

11. Provide for the protection and management of the sensitive, State-listed, and Federally-listed plant and animal species.

12. Provide for livestock grazing where compatible.

13. Provide for the protection and management of wildlife habitat.

14. Identify any impacts on predator control.

15. Provide for hunting in concert with biological cycles when possible.

16. Provide for recreational uses where compatible.

17. Identify any impacts of off-road vehicle use.

18. Maintain or enhance visual quality.

19. Provide for the protection of cultural resources.

20. Provide for the management of the Culp Canyon Wilderness Study Area under Interim Management Policy procedures pending Congressional determination.

Inventory and Data Collection

Using the planning criteria and focusing on the issue of public use and BLM management of the resources on McGregor Range, BLM specialists identified resource inventory needs and collected data accordingly. The inventories involved data collection, field examination, literature searches, and consultation with agencies, organizations, and individuals.

Analysis of Management Situation

The BLM gathered information and evaluated the capability and condition of the physical and biological characteristics of McGregor Range. This analysis provided the data base for developing and evaluating alternatives. The Management Situation Analysis (MSA) is available for public review at the BLM Las Cruces District Office.

Formulation of Alternatives

The White Sands RMPA/EIS analyzes potential impacts of the alternatives. The following alternatives were developed on the basis of the issue and the concerns raised during scoping: Alternative A (No Action Alternative), Alternative B, and Alternative C. Other alternatives were initially considered but eliminated from detailed analyses. These other alternatives are discussed in the Alternatives Considered but Eliminated from Detailed Analysis section of Chapter 2.

Estimation of Effects of Alternatives

In accordance with NEPA, the White Sands RMPA/EIS analyzes the physical, biological, economic, and social effects of implementing the alternatives. A general analysis was completed for the issue and concerns for McGregor Range. Site-specific environmental assessments (EAs) will be prepared when needed for specific projects and proposals prior to implementation. See Chapter 4 for details.

Selection of Preferred Alternative

The Preferred Alternative is Alternative C. Its formulation was based on (a) the issue and concerns identified through the planning process, (b) information obtained from public meetings and letters, (c) formal coordination and consultation with other agencies, (d) decision criteria developed and considered by management, and (e) impact analyses of the alternatives. The White Sands Area Manager and the District Manager recommended the Preferred Alternative to the New

Mexico State Director, who reviewed the analysis and approved the alternative. In addition, the McGregor Range Commander has reviewed the Draft Plan, and has recommended approval of the Draft to the Chief of Staff, Fort Bliss. The Preferred Alternative along with the other alternatives has been analyzed in the Draft White Sands RMPA/EIS. The public has 90 days, following the notice of filing with the Environmental Protection Agency (EPA), to review and comment on the Draft White Sands RMPA/EIS.

Selection of Plan Amendment

The BLM will evaluate comments received on the Draft White Sands RMPA/EIS for McGregor Range. Depending on the comments, the BLM and Fort Bliss may reassess or modify the Perferred Alternative or select from the range of other alternatives identified in the Draft RMPA/EIS. After reviewing the District Manager's and Fort Bliss' recommendation, the BLM New Mexico State Director will file the proposed RMPA and Final EIS with the EPA.

The Governor of the State of New Mexico will be given a 60-day consistency review to allow the State to determine whether the Proposed RMPA/Final EIS is consistent with or conflicts with State and local Government plans and policies. This review of the Proposed RMPA/Final EIS will begin when the Governor receives copies of the camera-ready document.

If no protest is received within 30 days after the Proposed RMPA/Final EIS is filed, the State Director and the Commanding General of Fort Bliss will approve the plan and publish a Record of Decision (ROD).

Implementation of the decisions could then take place. Section 3(e) of the Act requires the BLM and the Army to enter into an MOU to implement the management plan. This MOU will establish policies, procedures, and responsibilities of the BLM and Department of the Army for coordination and cooperation related to land use planning and resource management.

Prior to implementation of specific projects and proposals, site-specific environmental assessments (EAs) will be completed to analyze potential environmental impacts associated with the proposed activities. Mitigating measures will then be developed which will be incorporated into the permits as special stipulations.

Monitoring and Evaluation

After the ROD is published, intervals and standards for monitoring and evaluating the plan will be established. The intervals will not exceed 5 years. Standards will be developed to determine whether the mitigation measures are satisfactory, assumptions used in the assessment of impacts are correct, or significant changes have occurred in the related plans of other Federal, State, or local Governments. The information gained will be incorporated into any future planning. At least every 5 years, the BLM will determine, with the concurrence of the Army, which public and acquired lands are suitable for opening to the mining and mineral leasing laws, as per Section 12 of the Act. If further decontamination of the lands is accomplished (as per Section 7 of the Act) to allow expanded nonmilitary uses, an amendment to this plan will be completed to consider possible management changes.

CONFORMANCE STATEMENT

The White Sands RMP, completed in September 1986, did not fully address the public use and BLM management of the resources on McGregor Range as specified by the Military Lands Withdrawal Act of November 1986. In accordance with the planning regulations (43 CFR 1600 Subpart 1610.5), the alternatives as discussed in this document propose changes in the scope, terms, and conditions contained in the White Sands RMP and will require an amendment.

CONSISTENCY WITH OTHER PLANS

At this time, there are no known inconsistencies between any of the alternatives and officially approved and adopted resource related policies and programs of other Federal agencies, State and local Governments, and Indian tribes. Continuing coordination and consultation will take place during the public comment period on the Draft RMPA, the Proposed RMPA, and the ROD. As previously noted, the Governor of New Mexico will have 60 days to review the Proposed Plan to determine consistency with State plans.

CHAPTER 2

ALTERNATIVES

CHAPTER 2

ALTERNATIVES

INTRODUCTION

Three different alternatives were developed for resolution of the issue described in Chapter 1. Development of the alternatives was guided by the planning criteria, public consultation, coordination with other agencies, and evaluation by BLM. The alternatives represent a reasonable range of options among multiple-use management programs.

This chapter contains management guidance applicable to all three alternatives, a description of each of the three alternatives, and a discussion of other alternatives that were considered but eliminated from detailed analysis. Table S-1, located in the Summary at the beginning of this document, summarizes the specific components of each alternative. Table S-2 summarizes and compares the potential impacts of each alternative on the different resources affected. Chapter 4 more fully describes those potential impacts.

CONTINUING MANAGEMENT GUIDANCE

This section describes resource management guidance that is applicable to, and therefore constitutes a part of, all alternatives. This guidance will continue regardless of which alternative is eventually selected. Continuing management guidance includes laws, executive Orders, regulations, Department of the Interior manuals, BLM manuals, and BLM Instruction Memoranda.

Continuing management guidance also includes previous decisions for McGregor Range from the White Sands Resource Management Plan (RMP) (BLM 1986) which are being carried forward and incorporated into this RMP Amendment (RMPA). Those previous decisions are summarized in Appendix B.

The estimated surface disturbing actions per year for a 20-year period under Continuing Management Guidance are summarized in Table 2-1.

TABLE 2-1
ESTIMATED SURFACE DISTURBING ACTIONS
PER YEAR OVER A 20-YEAR PERIOD

Action	Average Number per year	Total Area Disturbed (acres)
Linear ROWs	< 1	1
Pipelines	1	0.6
Reservoirs	< 1	1
Wells	< 1	1
Livestock Control Fencing	1	0.4
Unimproved Roads	2	1.5
Fence Modification	1	1
Wildlife Exclosures	< 1	0.1
Tree Planting	10	1
Cultural Exclosures	< 2	0.4
Cultural Excavation/ Testing	< 1	1
Wildfire Control	1	1
	TOTAL	10

Source: BLM Las Cruces District Office Files, 1988.

Lands

It is BLM's policy to make public land and its resources available for use and development to meet National, regional, and local needs and to be consistent with National United States objectives.

Rights-of-way, Leases, and Permits

The BLM may grant nonmilitary leases, permits, and rights-of-way (ROWs) to qualified individuals, businesses, and other governmental entities for the use of the withdrawn land.

All ROW applications are analyzed on a case-by-case site specific basis, and natural and cultural values are protected or avoided.

There are no designated corridors, but ROWs are issued along the same ROW with existing ROWs to promote joint use whenever possible. The Army dictates avoidance and exclusion areas.

Other Land Use Authorizations

These lands do not meet Federal Land Policy and Management Act (FLPMA) Section 203 sales or other disposal criteria. Any other land use may be authorized only with the concurrence of the Army.

The BLM will negotiate with the State of New Mexico to acquire through exchange the State land (920 acres) within the McGregor Range (see Map 2-1). This land will be managed as part of the McGregor Range withdrawal. This is a previous decision from the 1986 White Sands RMP that is being brought forward into this document (see Appendix B, Decision Number L-3).

Access

The Range is closed to the general public except along State Road 506. Access is authorized by the Army for specific purposes with a check-in and check-out process. If the Army determines that military operations, public safety, or National security require it, the entire Range including State Road 506 may be closed to public use.

Any such closure shall be limited to the minimum areas and periods which the Army determines are required to carry out their mission.

Minerals

It is BLM policy to make mineral resources available in accordance with the objectives of the Mining and Minerals Policy Act of 1970, and the National Materials and Minerals Policy Research and Development Act of 1980. These policies require the Federal Government to facilitate the development of mineral resources to meet National, regional, and local needs for domestic and defensive purposes. The BLM is also responsible for ensuring that mineral development is carried out in a manner which minimizes environmental damage and provides for the rehabilitation of affected lands. Prior to any surface disturbing activities, an EA is prepared which analyzes potential environmental impacts associated with the proposed mineral activity. Mitigating measures are then developed which are incorporated as special stipulations in the permit. The BLM official policy appears in Appendix C.

Air, Soils, Water Resources

Air

Reduction of air quality impacts from activities on public land is accomplished by mitigation measures developed on a case-by-case basis through the National Environmental Policy Act (NEPA) or statutory or regulatory processes.

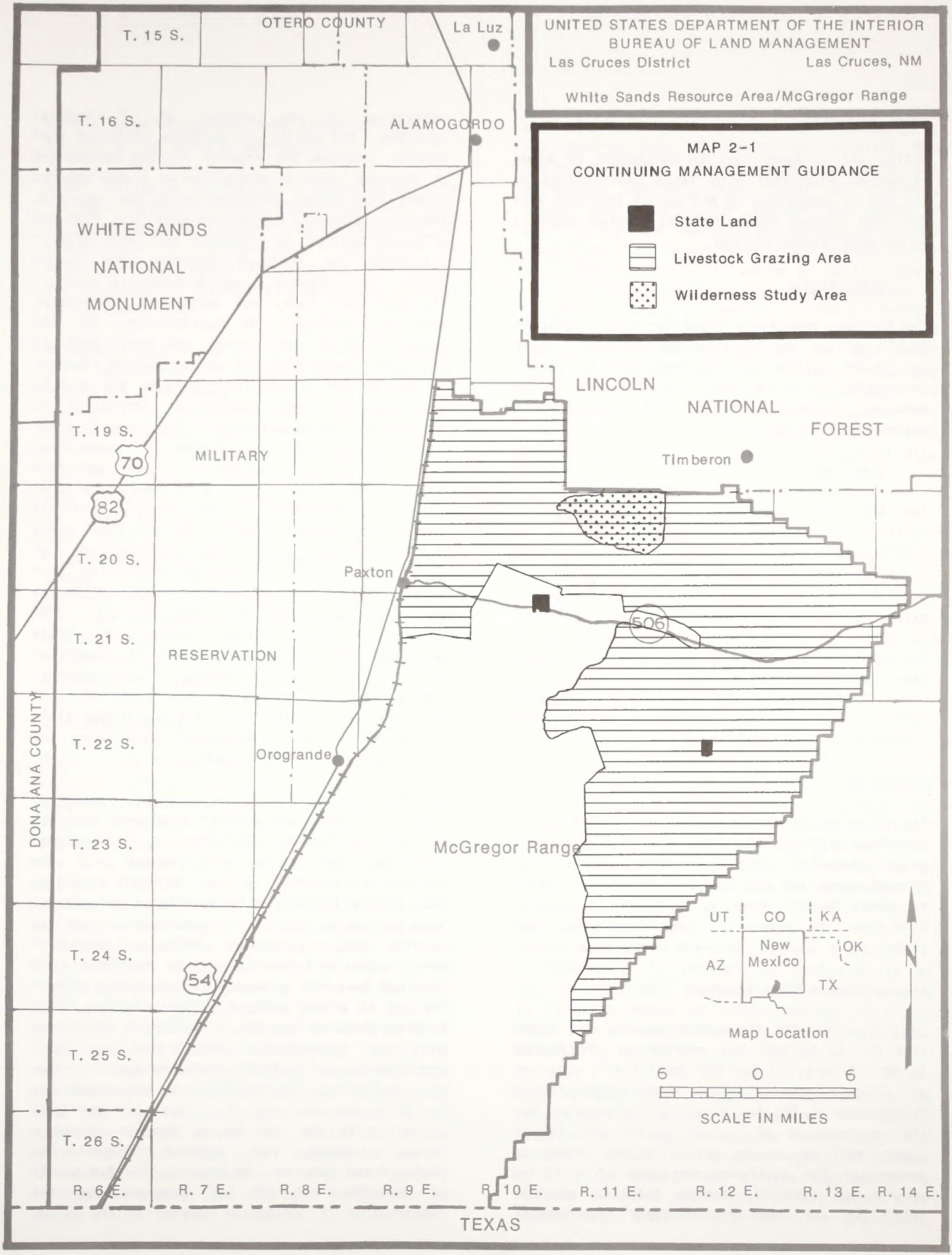
The Air Quality Bureau of the Environmental Improvement Division (EID) has the authority and responsibility to enforce air quality regulations and standards in New Mexico. The BLM is required to comply with the New Mexico State Implementation Plan on air quality as well as meet responsibilities under the Clean Air Act, as amended, and FLPMA.

The BLM 7300 Manual provides administrative guidance on air resources upon approval.

Soils

Updating of the soil surveys and soil interpretative data will be maintained as current as possible. Soils data will be used in planning, support, and implementation of resource activities. BLM Manual 7100 provides administrative guidance to the soil resource program.

Emphasis is placed on prevention of deterioration or degradation as well as conservation of the soil resource.



Source: Las Cruces District Office Files, 1988.

Water Resources

Policy and guidance for the management of water resources associated with lands administered by the BLM is summarized in BLM Manual Sections 1621 and 7000 through 7300. General program emphasis is on water rights and use.

Water Rights

The Army has reportedly filed for water rights to 60,000 gallons per day from the Sacramento River and 50,000 gallons per day from Carrizo Spring. Information as to the Army's water rights can be obtained through the Corps of Engineers in Albuquerque, New Mexico.

Water Use

The Army, in cooperation with the BLM, will retain and exercise complete control of distribution and use of water which flows through pipelines from the Sacramento River and Carrizo Spring. From here, the water is piped through an extensive system to distribute water throughout 11 of the 14 units. A second pipeline from the Sacramento River supplies water to the three remaining units. Water location and amount is a critical factor in the creation of suitable habitat and distribution for wildlife and livestock.

Vegetation

The objective of vegetation management within the livestock grazing area is to maintain a desirable plant community which is equivalent to the present rangeland ecological condition and trend on areas having good to excellent ecological condition and stable to improving trend, and stabilize or improve the trend in the other areas.

Special Status Plant Species

Section 7 of the Endangered Species Act (ESA) (Public Law 97-304) and regulations promulgated in 50 CFR Parts 17 and 402 specifically requires all Federal agencies to use their authorities in furtherance of ESA to (a) carry out programs for the conservation of listed species and (b) to ensure that any agency action is not likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. This is a non-discretionary requirement pertaining to the actions of all Federal agencies. BLM policy and guidance establish that species proposed for Federal listing be managed at the same level of protection as listed species except that formal consultation is not required. However, Section 7 conference with U.S. Fish and Wildlife Service is required for "may affect" situations on proposed species (BLM Manual 6840). For Category 1 and 2 Candidate species, the BLM shall carry out management, consistent with the principles of multiple-use, for the conservation of the species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered (BLM Manual 6840). The State Director may designate sensitive species in cooperation with the State of New Mexico. These sensitive species must receive, as a minimum, the same level of protection as do Federal candidate species (BLM Manual 6840). The BLM shall carry out management for the conservation of State-listed plants. State laws protecting these species apply to all BLM programs and actions to the extent that they are consistent with FLPMA and other Federal laws. Where the State government has designated species in categories that imply local rarity, endangerment, extirpation, or extinction, the State Director will develop policies that will assist the State in achieving their management objectives for those species (BLM Manual 6840).

All BLM actions will be evaluated for potential impacts to State and Federal endangered species. If the evaluation indicates a "no affect" situation, the action may proceed. If the evaluation indicates a "may affect" situation (may affect includes both beneficial and adverse impacts) on a Federally-listed species and the adverse impacts cannot be eliminated, Section 7 consultation with the FWS must be conducted. BLM does not have the authority to make a "no affect" finding if a "may affect" situation exists. For Federal proposed species, a Section 7 conference will be conducted. There are no legal requirements for Federal Candidate species other than BLM policy for multiple-use management and to eliminate the need for listing. BLM will consult with the New Mexico Forestry Resource Survey Section for adverse impacts to State-listed species. In general, the BLM should be managing all of its programs for the conservation of endangered species to the extent

that a jeopardy opinion need never be issued by the FWS or the State of New Mexico.

After initiation of Section 7 consultation with FWS on a Federally-listed species BLM will not, in accordance with Section 7 (d) of ESA, make any irreversible or irretrievable commitment of resources which would preclude the formulation and execution of reasonable alternatives to solve the conflict.

Management objectives for special status species will include survey of potential habitat for occurrence. Management of those species will be consistent with recovery plans, regulations, and policy as described above.

Fort Bliss will be responsible for compliance with requirements for conservation and protection of listed species with regard to their actions under Section 7 of ESA and implementation of all Recovery Plans on Army fee-owned land on McGregor Range. BLM will be responsible for implementation of all Endangered Species Recovery Plans for withdrawn public land on McGregor Range and compliance with requirements for conservation and protection of listed species with regard to all BLM actions under Section 7 of ESA.

Livestock Grazing

Under continuing management guidance, the existing livestock grazing program on McGregor Range will continue. Public Land Order (PLO) No. 1470 of August 21, 1957 withdrew public land on McGregor Range for the use by the Department of the Army (DOA) as a missile testing range. Section 4(e) of PLO No. 1470 provided that grazing use be allowed if compatible with the military purposes. A Memorandum of Understanding (MOU) between the DOA and the Department of the Interior was signed in 1966 which provided for Co-use grazing on McGregor Range. These lands are administered by the BLM, under the provisions of the Taylor Grazing Act of June 28, 1934 (48 Stat. 1269, 43 U.S.C. 315, et. seq.), as amended. The McGregor Range livestock grazing area is shown on Map 2-1. The Act of 1986 provided that grazing be continued on the Range and managed pursuant to Section 608 of the FLPMA (43 U.S.C. 1782) until Congress determines otherwise. The objectives of the grazing management program on McGregor Range are to maintain the present rangeland condition which is the desired plant community and maintain the trend on areas having good to excellent ecological condition and stable to improving trend, and stabilize or improve the trend in other areas; and increase the harvest of forage production from 49,877 animal unit months (AUMs) to 60,000 AUMs for utilization by cattle, deer, and pronghorn antelope. The objectives can be accomplished through careful planning, giving attention to proper placement of rangeland improvements, distribution of salt and other supplements, distribution of livestock, kind and class of livestock, number of livestock, and season of use. Additional information is contained in the McGregor Grazing EIS (BLM 1980) and the McGregor Range Activity Management Plan (BLM 1982).

Previous Decisions

The following list is a summary of previous decisions for McGregor Range as described in the White Sands RMP (see Appendix B) that will continue to be implemented. These decisions have been consolidated into four sections to be consistent with the RMP format. The original intent has not been changed, rather clarified, and summarized.

Administrative Procedures

McGregor Range consists of 608,385 total acres with 271,000 acres being grazed by livestock. As at present, no livestock grazing will be allowed on the remainder of McGregor Range outside of the current livestock grazing area. Authorization to graze livestock will continue to be granted by competitive bidding at public auction through grazing contract.

A stipulation to the grazing contracts is as follows: BLM will manage livestock distribution by rotating access to water supplies, provided there are no conflicts with other uses, i.e., wildlife.

Other proper range management practices may be stipulated in the grazing contract to improve distribution, reduce resource conflicts, and achieve site-specific resource goals. Placement of salt and mineral and protein supplements in relation to water supply will be determined on a case-by-case basis. (This decision previously

stated that "Lessees will be required to place salt and protein supplements at least 0.5 miles from water." The decision was modified because the actual distance may vary based on terrain and management goals.

Grazing Management

The season of use and the length of the use are subject to the discretion of the BLM Area Manager. Determination will be made through the analysis and evaluation of monitoring studies (conducted by BLM employees). Normally the season will be October 1 to June 30; however, some units may receive up to 18 consecutive months of use. Summer grazing will occur on some units to facilitate proper utilization of species which are normally not a primary forage, and in so doing, will reduce utilization of key forage species such as black grama.

Class and kind of livestock will continue to be cattle. Authorization of other class of livestock will be on a contract-by-contract basis. Normally horses will be limited to three per pasture.

Authorization of the number, class, or kind of livestock shall be made in advance as part of the grazing contract; however, on long-term contracts monitoring studies, history of use, and current year precipitation will dictate adjustments made to the contract by the Area Manager through consultation. The objective for utilization of key forage species is to achieve an average of 50 percent use by all grazing animals. Utilization levels will vary by species based on pasture specific resource goal.

Rangeland Improvements

Rangeland improvements will be constructed to facilitate resource management objectives prescribed in activity plans. All rangeland improvements constructed on public land will be in accordance with pertinent procedures, design specifications, executive orders, manual requirements, regulations, and policies. Site-specific Environmental Assessments will be completed as appropriate for management actions. Details for improvements (specifications, maintenance, etc.) are contained in the White Sands RMP and in a number of other BLM improvement specification manuals.

Rangeland improvements will continue to be developed on the grazing units as proposed to improve or maintain forage production, livestock distribution, and ecological condition. Implementation of these rangeland improvements will be based on available manpower and funding, and on the goals and objectives of the BLM. Improvements would be subject to the criteria set in the Rangeland Improvement Policy.

BLM will continue to maintain and repair all grazing-related facilities, except that contractors will be responsible for maintenance of boundary fences and gates during the grazing season.

To achieve the above goals, the following objectives (specific projects) are carried forward from the McGregor EIS:

-17 1/2 miles of existing pipelines will be replaced (4 miles of pipelines have been replaced since 1984).

-38 1/2 miles of new pipeline will be constructed as funds become available.

-19 wells, 77 water troughs, 39 water storage tanks, and 5 dirt tanks will be constructed as funds become available.

- 3 corrals will be constructed.

-47 3/4 miles of unimproved roads will be constructed to provide access to water facilities. The roads will be suitable for fair weather travel by conventional vehicles.

Monitoring Studies

Analysis, Interpretation, and Evaluation

Periodically, all monitoring data will undergo analysis and interpretation so that an evaluation can be made to determine if resources have changed. BLM Technical Report (TR) 4400-7, Rangeland Monitoring: Analysis, Interpretation, and Evaluation (1985d) and pertinent District and State guidelines will be used in the process of analysis, interpretation, and evaluation of monitoring data. When evaluations show that present management practices will achieve management objectives, no changes will be made. Further appropriate management action will be

taken where evaluations suggest that resource values are being adversely affected or resource objectives are not being met.

Monitoring studies will be conducted to analyze actions to determine if goals and objectives of the Plan are being met. Action such as season of use, livestock stocking rate, and rangeland improvements will be stipulated in the issuance of new contracts based on the evaluation of monitoring studies. Monitoring will consist of, but are not limited to, actual livestock use, utilization of forage species, climatic data, and ecological rangeland condition and trend.

Wildlife

FLPMA requires that management be on the basis of sustained yield unless otherwise specified by law. Also, FLPMA specifically designates wildlife development and utilization as one of the principal uses of public land. This is the basis for wildlife management on all public land.

Under continuing management guidance, the existing use for wildlife within the livestock grazing area will continue (see Appendix B, Decision Number WL-1). The objective of the existing decision is that deer numbers will increase to 5,000 and pronghorn numbers will increase to 700 by the year 1992. This will require 3,529 AUMs of forage for deer and 442 AUMs of forage for pronghorn.

The existing Co-Use Area HMP would continue in the livestock grazing area. (See the detailed description of the HMP under the No Action Alternative section of this Chapter.) This HMP is currently being implemented with emphasis on construction and maintenance of watering devices and nesting exclosures. Other projects being implemented are fence modifications and tree plantings. This HMP will be combined with any other HMP developed exclusively on McGregor Range in the future.

Provisions for animal damage control and the Sikes Act are discussed under the individual alternatives in this Chapter.

Special Status Animal Species

Section 7 of the ESA (Public Law 97-304) and regulations promulgated in 50 CFR Parts 17 and 402 specifically requires all Federal agencies to use their authorities in furtherance of ESA to (a) carry out programs for the conservation of listed species and (b) to ensure that any agency action is not likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. This is a non-discretionary requirement pertaining to the actions of all Federal agencies. BLM policy and guidance establish that species proposed for Federal listing be managed at the same level of protection as listed species except that formal consultation is not required. However, Section 7 conference with U.S. Fish and Wildlife Service is required for "may affect" situations on proposed species (BLM Manual 6840). For Category 1 and 2 Candidate species, the BLM shall carry out management, consistent with the principles of multiple-use, for the conservation of the species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered (BLM Manual 6840). The State Director may designate sensitive species in cooperation with the State of New Mexico. These sensitive species must receive, as a minimum, the same level of protection as do Federal candidate species (BLM Manual 6840). The BLM shall carry out management for the conservation of State-listed animals. State laws protecting these species apply to all BLM programs and actions to the extent that they are consistent with FLPMA and other Federal laws. Where the State government has designated species in categories that imply local rarity, endangerment, extirpation, or extinction, the State Director will develop policies that will assist the State in achieving their management objectives for those species (BLM Manual 6840).

All BLM actions will be evaluated for potential impacts to State and Federal endangered species. If the evaluation indicates a "no affect" situation, the action may proceed. If the evaluation indicates a "may affect" situation (may affect includes both beneficial and adverse impacts) on a Federally-listed species and the adverse impacts cannot be eliminated, Section 7 consultation with the FWS must be conducted. BLM does not have the authority to make a "no affect" finding if a "may affect" situation exists. For Federal proposed species, a Section 7 conference will be conducted. There are no legal requirements for Federal Candidate species other

than BLM policy for multiple-use management and to eliminate the need for listing. BLM will consult with the New Mexico Department of Game and Fish (NMDGF) for adverse impacts to State-listed species. In general, the BLM should be managing all of its programs for the conservation of endangered species to the extent that a jeopardy opinion need never be issued by the FWS or the State of New Mexico.

After initiation of Section 7 consultation with FWS on a Federally-listed species BLM will not, in accordance with Section 7 (d) of ESA, make any irreversible or irretrievable commitment of resources which would preclude the formulation and execution of reasonable alternatives to solve the conflict.

Management objectives for special status species will include survey of potential habitat for occurrence. Management of these species will be consistent with recovery plans, regulations, and policies described above.

Fort Bliss will be responsible for compliance with requirements for conservation and protection of listed species with regard to their actions under Section 7 of ESA. BLM will be responsible for implementation of Recovery Plans on McGregor Range and compliance with requirements for conservation and protection of listed species with regard to all BLM actions under Section 7 of ESA.

Protection of Wetlands

Management of riparian and arroyo riparian habitats is directed through Executive Order (EO) 11990, Protection of Wetlands. Wetlands are defined in the EO as those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Federal agencies are directed to minimize destruction or modification of wetlands and consider factors including maintenance of natural systems, including conservation and long-term productivity of existing flora and fauna, species and habitat diversity, fish, and wildlife.

Arroyo riparian habitats could fit the definition of wetlands provided in EO 11990, and therefore, warrant management under the Wetlands EO. In mapping the wetlands of the United States, FWS has mapped certain arroyos on McGregor Range as wetlands. BLM Riparian Area Policy precludes management of arroyos as riparian areas, however, it does not prevent management under EO 11990. The BLM and Fort Bliss are responsible for compliance with the EO with respect to their separate programs.

Exotic Organisms

EO 11987 (42 USC 4321) directs executive agencies, to the extent permitted by law, to restrict the introduction or importation and funding of exotic species into natural ecosystems on lands they administer. It also encourages State, local governments, and private citizens to prevent introduction of exotic species. However, the Order does not apply if the Secretary of Agriculture or Secretary of Interior finds that such introduction will not have an adverse effect on natural ecosystems. BLM policy stated in Manual 6820 controls introduction, transplant, and reestablishment of exotic species. These programs must be approved or sponsored by the State wildlife agency. Introductions or transplants which conflict with endangered species, existing land uses, wilderness, special land designations, desired genetic purity of native species, or disease control may not occur. BLM gives priority to protecting, maintaining, and enhancing the status of native fauna and flora. Introductions of exotic wildlife must be directed at filling a specific vacant niche. Consideration will be given to reintroduction of endangered species to prevent extinction of that species.

Game and Fish Cooperation

A Memorandum of Understanding (MOU) signed between BLM and NMDGF in 1985 establishes a common goal for management of wildlife, under authority of the Sikes Act and according to policy in 43 CFR 24.4, in New Mexico in a mutually beneficial manner for the citizens of New Mexico and the United States. All phases of agency operations affecting wildlife and the programs of the other agency are to be cooperatively evaluated, reviewed, and implemented. In addition, an Operation Plan

developed by NMDGF, with input from BLM, provides specific goals and objectives for management of wildlife throughout the State.

Other Standard Operating Procedures For All BLM Actions On McGregor Range

1. Wildlife and wildlife habitat needs will be considered during site-specific planning for all actions.

2. Stipulations developed through consultation with NMDGF under the current Master MOU will be attached to project authorizations.

3. Habitat improvement projects will be implemented where necessary and will be identified in HMPs, Coordinated Resource Management Plans (CRMPs), Recovery Plans, Sikes Act Comprehensive Plans, or other appropriate wildlife planning documents.

4. Livestock water developments will be designed to provide for wildlife needs.

5. Livestock water will be available yearlong for wildlife use

6. New fences will be constructed according to current guidance and District policy to minimize impact on big game species.

7. Existing fences will be modified as needed after identification in activity plans to conform to accepted fencing standards for big game.

8. Right-of-way fences for State highways will be constructed in accordance with standards outlined in the 1981 or subsequent MOU between BLM and the New Mexico State Highway Commission so as not to limit movement of big game species.

9. Vegetation treatment projects will be designed to minimize impacts on wildlife and to improve habitat, especially pronghorn antelope, whenever project and wildlife objectives are compatible.

10. During nesting season, a raptor inventory will be conducted on areas proposed for vegetation treatment to identify and flag land within a 1/4 mile radius of active nests so they will not be disturbed by the proposed treatment. Important raptor breeding areas will be avoided during nesting season.

11. Raptors will be protected by requiring all new powerlines to be constructed to "electrocution proof" standards. Problem powerlines will be identified and modifications recommended to the owners.

12. The construction of new roads into crucial wildlife habitats (Sacramento Foothills deer areas and Mesa Grasslands and Hills pronghorn antelope areas) for public transportation will be avoided. Permanent or seasonal road closures may be instituted where problems exist or are expected. Such closures will be coordinated with Fort Bliss.

13. Restrictions on natural resource permits, leases, and casual use actions (such as seasonal restrictions, seismic exploration, or no surface occupancy stipulations on oil and gas leases) may be instituted to protect wildlife sensitive to disturbance.

14. In support of State Game Regulations, there will be no parking or camping during any hunting season, except in established camp sites, within 300 yards of any livestock or wildlife water on McGregor Range.

15. As at present, water for wildlife will be provided year-round in each pasture.

Recreation

Recreation programs are managed according to multiple-use principles unless otherwise specified by law or BLM policy. The objectives of the program are to ensure the availability, where possible, of quality outdoor recreation opportunities. However, opportunities are limited because of the military mission having priority.

The BLM utilizes the Recreation Opportunity Spectrum (ROS) as a framework for defining outdoor recreation opportunity environments. It is the management tool for inventory, planning, and administration of outdoor recreation resources on public land. A general description of the ROS classes is contained in Appendix D. Of the six ROS classes, three ROS classes are

established for McGregor Range. The acreage per ROS class management objectives is given in Chapter 3, Recreation.

Visual Resources

Visual resources will continue to be inventoried and evaluated as part of resource management activity and project planning. A contrast rating process is used as needed as a project assessment tool during environmental review of affected areas. Stipulations are established as appropriate to ensure compatibility of the project with management objectives for visual resources.

The BLM administers visual resources on McGregor Range according to four Visual Resource Management (VRM) class objectives (see Appendix E for descriptions). Visual resource class objectives acreages are noted in Chapter 3, Visual Resources.

The VRM system will continue to be the basic tool for inventory, planning, and management of visual resources on public land. Future efforts will concentrate on updating the visual resource inventory data base and re-establishing VRM class objectives. The BLM recognizes the constantly changing natural resource base and its effects on scenic quality. A visual contrast rating will be prepared for all projects proposed within highly sensitive areas and for potentially high impact projects, regardless of location.

Wilderness

The Culp Canyon Wilderness Study Area (WSA) (see Map 2-1) will be managed under Interim Management Policy and Guidelines for Land Under Wilderness Review (USDI, BLM 1983), until the area is either added to the National Wilderness Preservation System or removed from further wilderness consideration.

If designated as wilderness, the area will be managed under the Wilderness Management Policy (USDI, BLM 1981). If removed from further wilderness consideration, the area will be managed under the principles prescribed by this Plan Amendment for McGregor Range. Culp Canyon WSA has a nonsuitable recommendation.

Assessing wilderness suitability is outside the scope of this Resource Management Plan Amendment (RMPA). Any discussions concerning lands within the WSA will be confined to the RMP issue and concerns. A complete description of the WSA is contained in the New Mexico Statewide Wilderness Study: Final Environmental Impact Statement: Appendix 43 Culp Canyon Wilderness Analysis Report (BLM 1988).

Cultural Resources

The objective for cultural resources on McGregor Range is to manage cultural resources on withdrawn land on the Range in a manner that protects and provides for the proper use of those resources. Cultural resources include archeological, historical, and socio-cultural properties. Paleontological and natural history resources are also managed under the Cultural Resources Program, but at present none of these resources are known to exist within the boundaries of McGregor Range. Cultural resources are managed according to the specific needs of each specific resource, the degree of threat, and the resource's vulnerability. The WSRA attempts to protect the full array of cultural resources, both prehistoric and historical found on BLM administered land within McGregor Range.

Federal laws such as the National Historic Preservation Act of 1966 (NHPA) as amended, the Archeological and Historic Preservation Act of 1974, the Archeological Resources Protection Act of 1979 (ARPA), the American Indian Religious Freedom Act of 1978 (AIRFA), and FLPMA provide for the protection and management of cultural resources.

These laws are implemented through Federal regulations, which provide guidance for the operational procedures of the Cultural Resource Program in meeting the requirements of the law. One of the primary regulations directing procedures for compliance is 36 CFR 800, "Protection of Historic and Cultural Properties," which implements Section 106 of the NHPA. These regulations, as amended (Federal Register, Vol. 51, No. 169. Tuesday, September 2, 1986), established the National Advisory Council on Historic Preservation (ACHP), and defined its role in concert with Federal agencies and State Historic Preservation Officers (SHPOs). In New Mexico, a programmatic Memorandum of Agreement

(PMOA: NMSO-168 incorporated by reference) between the ACHP, SHPO, and BLM further defines these roles and streamlines the consultation process. Other relevant regulations are 43 CFR 7, which implements ARPA; and 36 CFR 60, which makes operational the National Register of Historic Places. In addition to Federal regulations, special agreements such as the PMOA cited above, instruction manuals, and memoranda are issued at various departmental levels to provide both general and specific guidance for the management of cultural resources. Current instruction memoranda issued at the National, State, and district levels are retained in the WSRA files, and are incorporated by reference.

Archeological and historical resources are initially evaluated under the criteria of eligibility of the National Register of Historic Places (36 CFR 60.4). Sites listed or eligible for the National Register are managed under BLM management procedures which have been developed in conformance with relevant laws and regulations.

Socio-cultural resources are managed in accordance with AIRFA, and with relevant sections of 43 CFR 7, which takes into account issues of concern to Indian tribes in the implementation of ARPA. The consultation process with Indian tribes concerning sites and locations of traditional religious significance is conducted on a project-by-project basis.

Inventory

The BLM undertakes and maintains a cultural resource inventory for all BLM administered land. These inventories are categorized into three classes: Class I - Existing inventory and literature search; Class II - Sampling field inventory (all sample units are inventoried to Class III standards); Class III - Intensive field inventory. Except under certain specific conditions, set forth under the BLM Cultural Resource Manual and NMSO-168, Class III inventory is required before any surface disturbance may occur.

The WSRA contributes to a cumulative site file of the Las Cruces District which documents the locations of all known sites and all areas surveyed, including McGregor Range. In addition, WSRA will begin a plan of action to establish procedures and priorities for conducting a 10 percent Class II cultural resource inventory and will initiate field work to accomplish this. McGregor Range will be included in this inventory. (See Decision Number C-8, Appendix B.)

Nominations

The WSRA nominates cultural resources according to their eligibility for inclusion in the National Register of Historic Places. When a cultural resource is determined eligible for inclusion in the National Register of Historic Places, a cultural resource management plan (CRMP) will be developed and implemented in order to provide the maximum amount of protection and to address the needs of specific cultural resources (see Decision Number C-9, Appendix B).

Protection

The WSRA protects cultural resources through the application of administrative (such as ORV closure) and physical measures (such as fencing) as necessitated by the cultural resource's specific needs, vulnerability, and degree of threat. Interim protection focuses primarily on patrol and surveillance, until specific cultural resource management objectives are developed. WSRA is preparing a formal Patrol and Surveillance Plan designed to protect the cultural resource sites, investigate conditions of vandalism and natural forces in remote areas, and increase site inventories through site recordation during patrols. An active program of signing cultural resource properties under threat of active or potential vandalism is current and ongoing.

Section 110 of the NHPA states that it is the responsibility of each Federal agency to establish a program to locate, inventory, and nominate all properties under that agency's ownership or control that appear to qualify for inclusion in the National Register. WSRA will assume responsibility for cultural resources for all nonmilitary undertakings on withdrawn land on McGregor Range. The Army will assume responsibility for cultural resources for all military activities on the entire McGregor Range. Sharing of cultural resource data between the two agencies will be encouraged.

National Register nominations will be prepared on a regular basis on McGregor Range. This will

allow the cultural resources staff to make better informed decisions about the direct and indirect impacts on cultural resources. It will also significantly strengthen the current management approach for protection of cultural resource sites.

Fire

The BLM Las Cruces District is operating under the National Interagency Incident Management System (NIIMS).

The current policy is for BLM to suppress and monitor all nonmilitary fires except in impact and military use areas on McGregor Range. The Army is responsible to suppress or monitor all fires in impact areas and military use areas and all fires caused by military activities. If there is a question on what started a fire, a joint conversation between BLM and military will resolve who will put the fire out.

ALTERNATIVES CONSIDERED IN DETAIL

Alternative A - No Action

Alternative A is the No Action Alternative. This alternative is the continuation of current management direction under existing land use plan decisions and the MOU between the BLM and the Army. This alternative describes the management situation before the passage of PL 99-606 in 1986. The No Action Alternative provides a baseline for the comparison of the environmental effects of the other alternatives.

Lands

Under the No Action Alternative, any land use authorizations would continue to require Army concurrence. The 1957 withdrawal of McGregor Range provided no specific direction on whether the BLM has responsibility for issuing leases, easements, ROWs, and other land use authorizations.

Access

As discussed in detail under the Continuing Management Guidance section of this Chapter, access to McGregor Range is generally closed and is authorized only on a controlled basis.

Minerals

Under the No Action Alternative, all minerals on McGregor Range would continue to be withdrawn from the mining and mineral leasing laws (see Appendix B, Decision Number LM-1). The withdrawn land would be closed to locatables, leasables, and salables.

Watershed

Under this alternative, no watershed management plans would be developed and no monitoring studies for watershed would be conducted. Existing watershed structures would be maintained, but new watershed treatments would only be implemented to prevent imminent danger to life, Federal investments, or life-supporting structures.

Vegetation

Under the No Action Alternative, no prescribed burning would be conducted to improve rangeland condition, no vegetation sale areas would be designated, and no monitoring studies for vegetation would be conducted outside of the livestock grazing area.

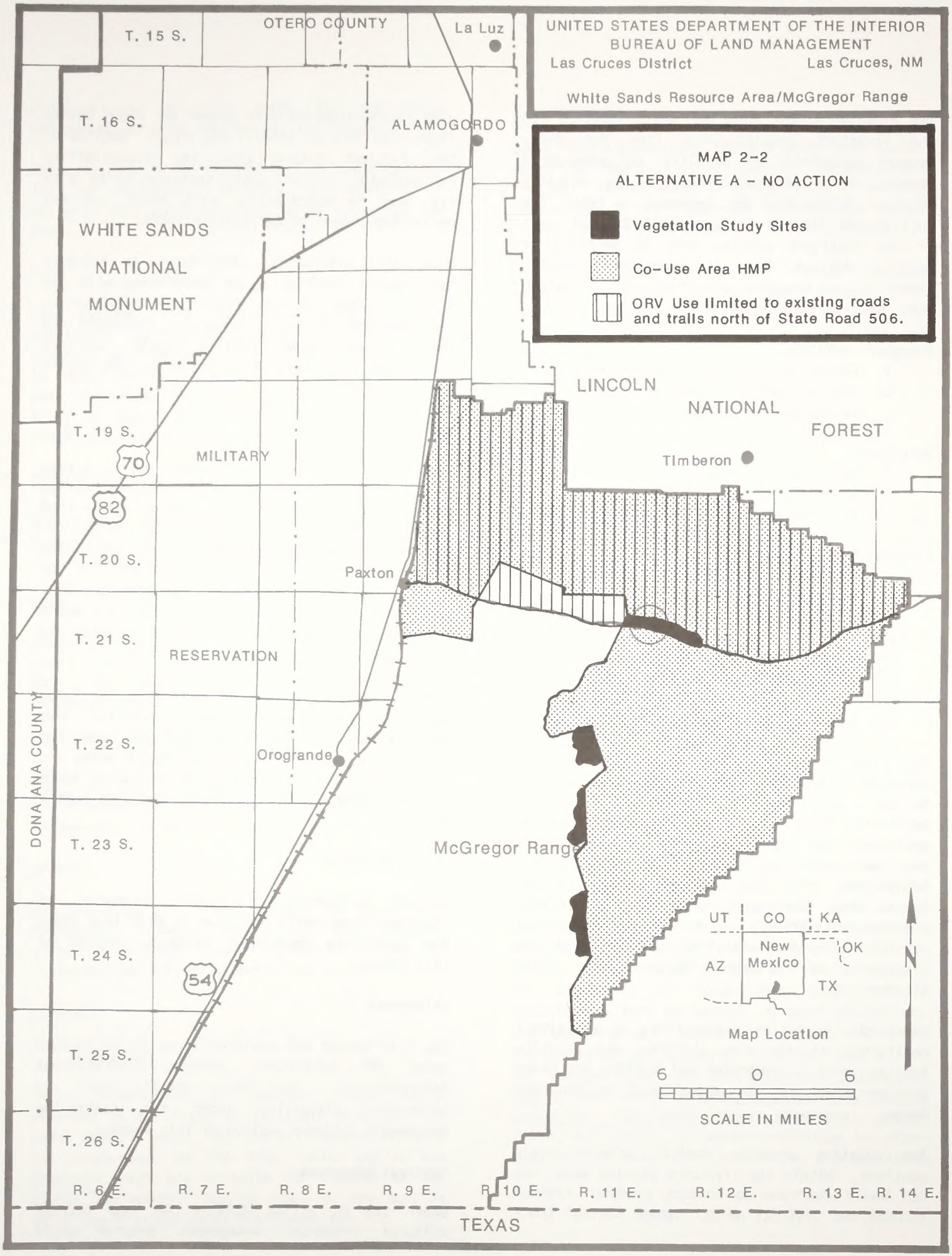
The four existing vegetation study sites (3,910 acres) would continue to be managed according to the existing Cooperative Agreement between the BLM, the Army, and New Mexico State University (NMSU). The location of the four study sites is shown on Map 2-2. A copy of the Cooperative Agreement is located in Appendix F.

Livestock Grazing

The current livestock grazing management program would continue, as described in detail under the Continuing Management Guidance section of this Chapter.

Wildlife

Under the No Action Alternative, existing forage use for wildlife would continue within the livestock grazing area (see discussion under the Continuing Management Guidance section of this chapter), but no forage would be reserved specifically for wildlife outside of the livestock grazing area.



Source: Las Cruces District Office Files, 1988.

The existing Co-Use Area HMP would continue for the livestock grazing area (see Map 2-2). Current management of wildlife and endangered species is accomplished through the existing McGregor Co-Use Area HMP completed in 1983. The goal of the plan is to manage the 271,000 acres of the livestock grazing area to maintain or improve habitat for the greatest species diversity and abundance compatible with livestock use. Specific objectives are as follows:

Pronghorn Antelope

1. Ensure fences do not prohibit movement.
2. Provide yearlong forage with emphasis on spring and fall forbs.

Mule Deer

1. Modify existing fences that inhibit movement.
2. Increase availability of browse.

Tularosa Prairie Dogs

1. Maintain plant communities in the vicinity of existing towns.

Avifauna

1. Provide nesting habitat for upland game and waterfowl in water.
2. Provide nesting habitat for other birds where opportunities exist.

The plan is currently being implemented with emphasis given on construction of watering devices and nesting exclosures. Annual monitoring consists of deer browse utilization evaluation and aerial counts for pronghorn antelope. Locations for prairie dog towns are maintained. The plan relies heavily on the Co-Use Area Grazing Plan to maintain proper grazing utilization for plant community maintenance. No additional HMPs would be developed on McGregor Range under this alternative.

Under the No Action Alternative, no additional monitoring studies for wildlife and wildlife habitat would be conducted and a Sikes Act Stamp program would not be established on McGregor Range.

The existing predator control program would continue. Within the livestock grazing area, the BLM would continue to conduct predator control through the District Animal Damage Control (ADC) plan in coordination with Animal and Plant Health Inspection Service (APHIS) and NMDGF. Outside of the livestock grazing area, the responsibility for predator control would continue to be with the Army in coordination with NMDGF and New Mexico Department of Agriculture (NMDA).

Under this alternative, deer hunts on McGregor Range would continue to be coordinated with the Army shut-down periods (Christmas holidays -- mid- December to early January). Pronghorn and small upland game hunting would continue consistent with Fort Bliss security and public safety closures.

Recreation

Under the No Action Alternative, public access for recreation purposes would continue to be denied except for hunting during prescribed periods. The current management practices for deer hunting would continue and the prescribed periods for hunting would continue to be coordinated with the Army shut-down periods. Pronghorn and small upland game hunting would continue consistent with Fort Bliss security and public safety closures.

ORV use, when access is authorized by the Army, would continue to be "limited to existing roads and trails" north of State Road 506 (see Map 2-2). This designation covers 116,000 acres and is the result of a decision in the White Sands RMP (BLM 1986) (see Appendix B, Decision Number W-6).

Visual Resources

Current management of visual resources on McGregor Range would continue as described under the Continuing Management Guidance section of this Chapter.

Wilderness

The Culp Canyon WSA would continue to be managed under IMP guidelines, pending Congressional determination. For more detail, see the wilderness discussion under the Continuing Management Guidance section of this Chapter.

Cultural Resources

Under the No Action Alternative, the current cultural resources management program would

continue as described under the Continuing Management Guidance section of this Chapter.

Research permits to institutions or organizations for the collection, recovery, and analysis of cultural data would continue to be issued by the Army.

Fire

The current fire management program would continue. The BLM would have responsibility to suppress and monitor all nonmilitary fires except in impact and military use areas. The Army would have responsibility to suppress or monitor all fires in impact and military use areas and all fires caused by military activities.

Alternative B

Alternative B permits resource use and development to a minimal extent which would result in low intensity public use.

Lands

Under Alternative B, the BLM would issue all public demand nonmilitary leases, easements, ROWs, and other land use authorizations on withdrawn land.

Nonmilitary use applications would be received at the BLM Las Cruces District Office. The BLM would process the applications and then submit the proposed actions to Fort Bliss, Real Property Management, for concurrence.

Access

As discussed in detail under the Continuing Management Guidance section of this Chapter, access to McGregor Range is generally closed and is authorized only on a controlled basis.

Minerals

Locatables

Under Alternative B, McGregor Range would continue to be closed to locatable minerals. At least every 5 years, the BLM will determine, with the concurrence of the Army, which public and acquired lands are suitable for opening to the mining and mineral leasing laws, as per Section 12 of the Military Lands Withdrawal Act.

Leasables

Under this alternative, the BLM would open 45,760 acres (see Map 2-3) to oil and gas and geothermal leasing. Leases could be issued only after Army concurrence. The remainder of McGregor Range would continue to be closed to leasable minerals.

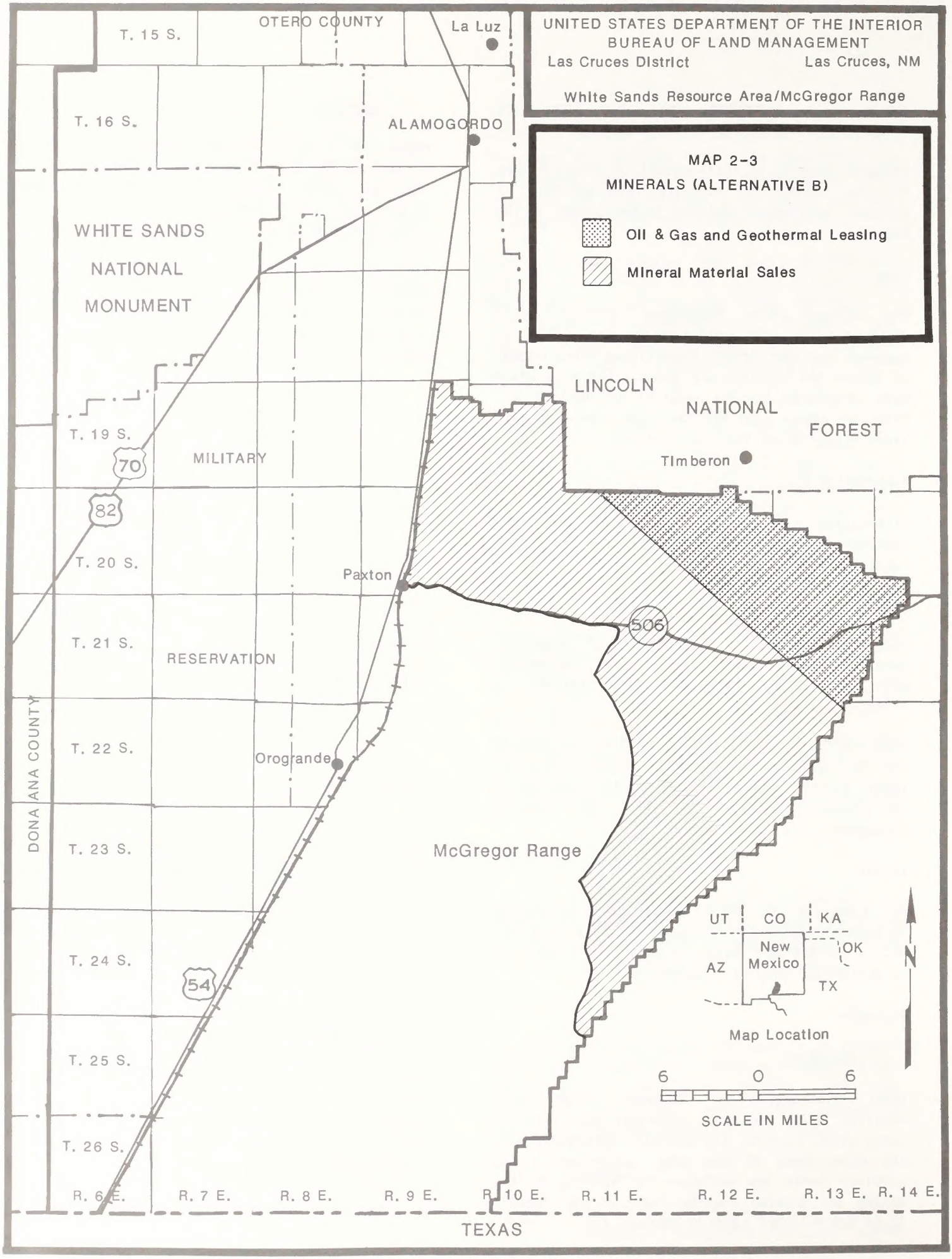
It is difficult to project future leasable mineral activity on McGregor Range. The estimated surface disturbing actions per year for a 20-year period for oil and gas activities are summarized in Table 2-2.

TABLE 2-2
ESTIMATED SURFACE DISTURBING ACTIONS
PER YEAR OVER A 20-YEAR PERIOD
FOR OIL AND GAS ACTIVITIES
ALTERNATIVE B

Action	Average Number Per Year	Total Area Disturbed (Acres)
Seismic Lines	< 1	5
Oil & Gas Exploration Wells	< 1	4
Oil & Gas Access Roads	< 1	5
	TOTAL	14

Source: BLM Las Cruces District Files, 1988.

For oil and gas leasing, the BLM has the responsibility for permitting, inspecting, and enforcing Notices of Intent (NOIs) to conduct oil and gas exploration for geophysical exploration. The BLM also executes surface management responsibilities associated with Application for Permits to Drill (APD). The BLM is responsible for monitoring all "down hole" work such as assuring aquifers protection, blowout prevention, and approving well completions, recompletions and abandonments. As a general rule, all public land not managed under the BLM Wilderness Management Policy (BLM 1981), Interim Management Policy and Guidelines for Lands Under Wilderness Review (USDI, BLM 1983), or where prohibited by other regulations, laws, or stipulations, are available



Source: Las Cruces District Office Files, 1988.

for oil and gas exploration, leasing, and development. Appendix C contains the BLM and Army stipulations that would be applied to oil and gas leasing where appropriate.

Geothermal resources are managed in a manner similar to oil and gas. Regulations governing this resource are found under 43 CFR 3200.

Leasable minerals other than oil, gas, and geothermal resources, such as coal, sodium and potassium are also governed by 43 CFR and applicable handbooks. There are no economical deposits of such minerals known to occur on McGregor Range.

Salables

The BLM would open 287,360 acres (see Map 2-3) to salable materials disposal. The remainder of McGregor Range would continue to be closed to salable materials disposal. Demands for salable minerals on McGregor Range would probably be limited. It is speculated that there would be about one use authorization for mineral materials per year over a 20-year period. The total amount of surface disturbance would average about one acre per year.

Mineral materials, in the form of blowsand, sand and gravel, building stone, and caliche occur throughout the Range. Regulations directing this program are in 43 CFR 3600 and the Mineral Materials Handbook.

Watershed

Under Alternative B, watershed management plans would be developed on 86,450 acres in the following areas (see Map 2-4):

- Grapevine (28,440 acres)
- El Paso Canyon (19,760 acres)
- Cockleburr (38,250 acres)

These are areas which have high erosion rates due to soil movement by water and air. The primary objectives of the watershed management plans would be to (1) protect, maintain, or improve the quality of the soil and water resources and watershed values, including natural site productivity and surface and ground water quality and quantity; (2) prevent deterioration of soil and watershed conditions where technically and economically feasible and rehabilitate areas where accelerated erosion and runoff have resulted in unacceptable resource conditions; and (3) prevent or minimize damage to natural site characteristics and economic losses due to floods, sedimentation, or accelerated runoff and erosion. The management actions required to meet these objectives would include contour furrowing and trenching in some areas and the construction of dams and dikes in other areas.

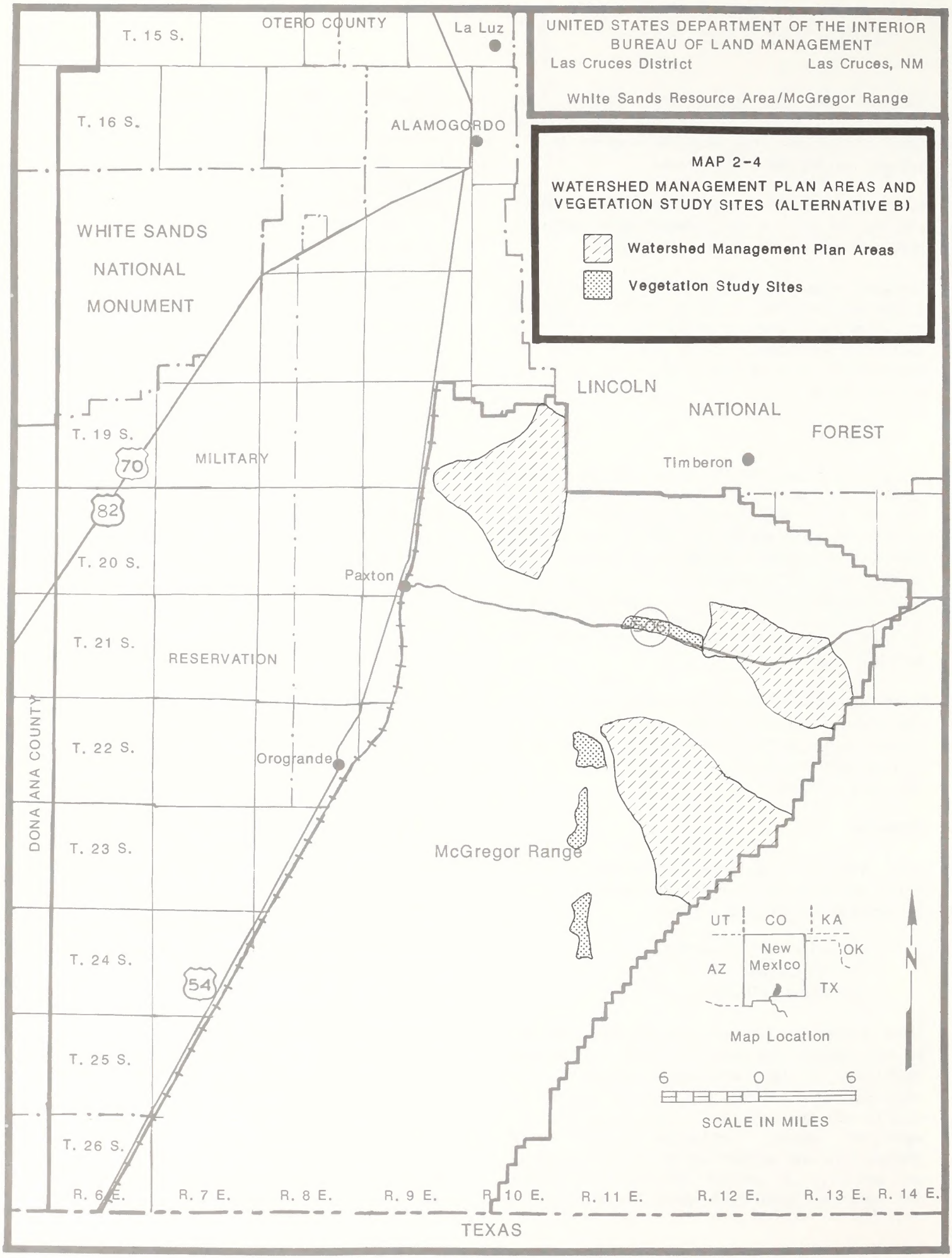
Monitoring studies for watershed would be conducted on withdrawn land over the entire McGregor Range. The objective of the monitoring studies would be to track impacts to soil erosion and condition. The monitoring studies would include coordination with the Army for field trips to identify watershed problem areas and use of approved ground and aerial photography to document soil conditions and changes. The BLM and the Army may coordinate and exchange data to benefit the programs of both agencies and increase the management efficiency on McGregor Range.

Vegetation

Under Alternative B, the area shown on Map 2-5 (220,800 acres) would be considered for prescribed burning. The vegetation objective of the prescribed burning would be to improve rangeland condition by allowing grasses such as tobosa and sacaton to increase, while shrubs such as mesquite, tarbush, snakeweed, and yucca would be reduced. Prescribed burn plans and site-specific EAs would be developed. The areas to be burned would be mapped and flagged. A fire suppression crew would be available to monitor the burns. All prescribed burns would be coordinated with the Army. No prescribed burns would be conducted on dudded lands containing unexploded ordnances or lands used exclusively for military activities.

Under this alternative, the four existing vegetation study sites (3,910 acres) would be managed according to the existing Cooperative Agreement between the BLM, the Army, and NMSU. The location of the four study sites is shown on Map 2-4. A copy of the Cooperative Agreement is located in Appendix F.

Monitoring studies for vegetation would be conducted on withdrawn land over the entire



Source: Las Cruces District Office Files, 1988.

McGregor Range. The objective of the monitoring studies would be to track impacts to vegetation. The monitoring studies would include coordination with the Army for field trips to observe any changes in vegetation and use of approved ground and aerial photography to document vegetation conditions and changes. The BLM and the Army may coordinate and exchange data to benefit the programs of both agencies and increase the management efficiency on McGregor Range.

Livestock Grazing

The current livestock grazing management program would continue as described in detail under the Continuing Management Guidance section of this Chapter.

Wildlife

Under Alternative B, existing forage use for wildlife would continue within the livestock grazing area (see discussion under the Continuing Management Guidance section of this Chapter), and also adequate vegetation would be reserved for wildlife forage and cover outside of the livestock grazing area, in areas consistent with military missions.

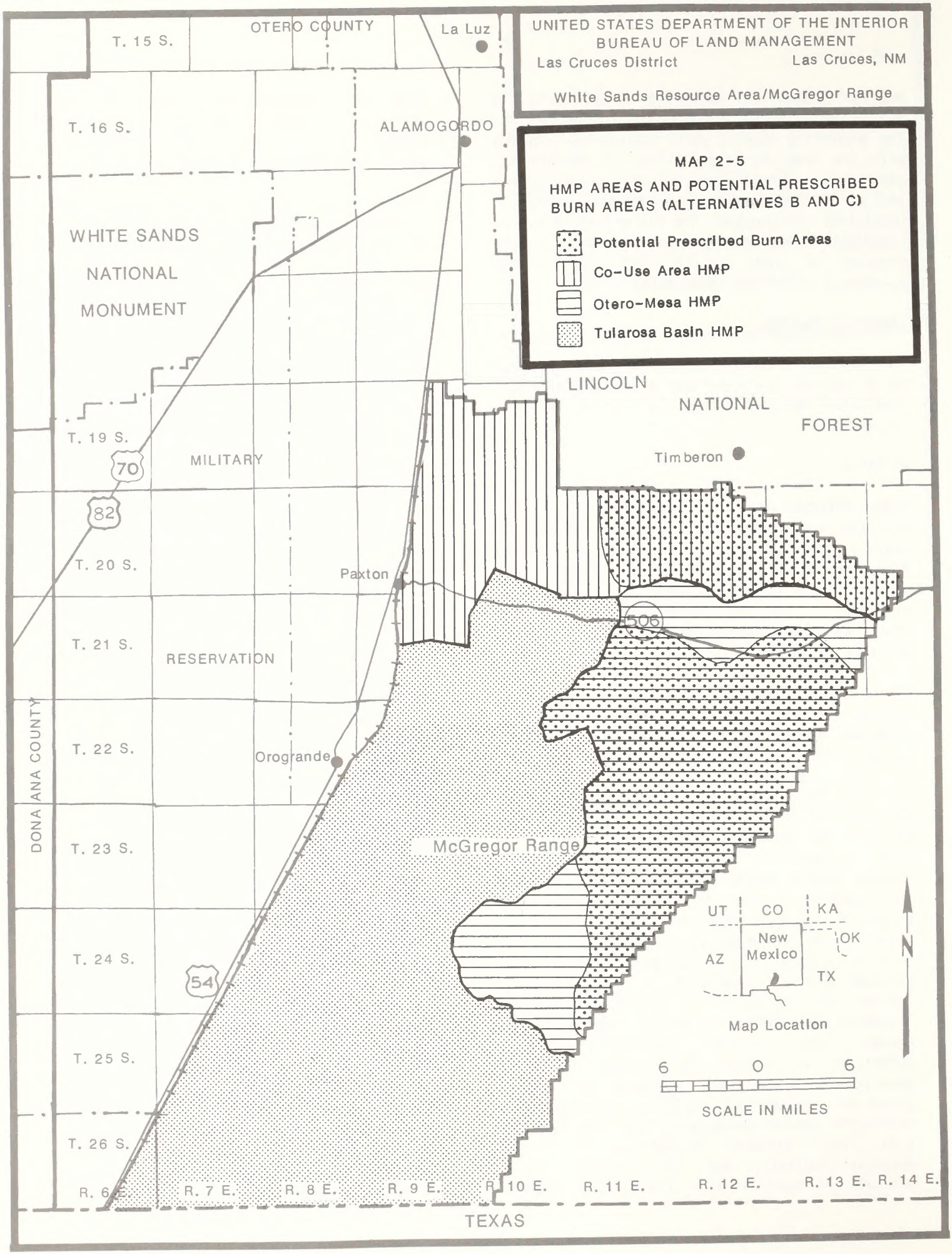
The existing Co-use Area HMP would be revised to include the Mesa Grassland, Mesa Hill, Arroyo Riparian, Desert Hills and Outwash, and Basin habitat sites in the Otero Mesa Antelope HMP (see Map 2-5), consistent with the military mission and activities. The goals of the Otero Mesa Antelope HMP on McGregor Range would be to (1) maintain the grassland habitats of Otero Mesa in good to excellent ecological condition; (2) provide stable habitat for endangered species; (3) provide stable habitat to maintain a pronghorn antelope population of 700 to 750 animals; and (4) minimize disturbance of Arroyo Riparian habitats for endangered species and non-game birds. Objectives of the HMP would include (1) review of the Co-use Area AMP to recommend adjustments to grazing management as needed; (2) develop additional fencing guidelines if needed; (3) manage the Mesa Grassland and Mesa Hill habitats to benefit pronghorn antelope and grassland threatened and endangered species using prescribed fire (see Map 2-5); (4) minimize disturbance to Arroyo Riparian habitats; and (5) provide stable habitat and populations of black-tailed prairie dogs for ecosystem maintenance and wildlife research purposes regardless of endangered species status, and nominate prairie dog populations in Otero County as BLM-sensitive.

The existing Co-Use Area HMP would also be revised for that area outside of the Otero Mesa Antelope HMP area discussed above (see Map 2-5).

This revision would have the following objectives: (1) determine the success of implemented management actions for deer and other priority species and establish new objectives which should include but not be limited to maintaining habitat to support 4,000 deer; (2) minimize disturbance of Arroyo Riparian habitats; (3) evaluate factors affecting the deer herd off of McGregor Range and implications related to habitat condition on the Range; (4) manage the Sacramento Foothills habitats for mule deer and other priority species using prescribed fire (see Map 2-4); (5) review the Co-Use Area AMP and recommend adjustments to grazing management if needed; (6) enhance small game populations and habitats; and (7) coordinate the removal of exotic species from the area with the Army and NMDGF.

A Tularosa Basin HMP would be developed to manage all habitats outside of the livestock grazing area (see Map 2-5), especially the Arroyo Riparian habitats, for priority species (and non-game birds in Arroyo Riparian habitats), in close coordination with the Army and NMDGF. Objectives of the HMP would be to (1) provide for sustained populations of game species; (2) manage habitats as natural systems and maintain or improve conditions for priority species and non-game species; (3) develop measures to minimize, mitigate, and reclaim damage to Arroyo Riparian habitats, in coordination with the Army; (4) coordinate the removal of exotic species from the area with the Army and NMDGF.

Monitoring studies for wildlife and wildlife habitat would be conducted over the entire McGregor Range. The objectives of the monitoring studies would be to determine populations, density estimates, or indices of priority species and to track sensitive habitats. The monitoring studies would include coordination with the Army for (1) flights for game counts; (2) flights for habitat evaluation; (3) field trips for habitat reconnaisance; and (4) use of approved



Source: Las Cruces District Office Files, 1988.

aerial photography for documentation of habitat conditions. The BLM and the Army may coordinate and exchange data to benefit the programs of both agencies and increase the management efficiency on McGregor Range.

A Sikes Act Stamp program would be established on McGregor Range for regular licensees, in coordination with the Army, NMDGF, and New Mexico Game Commission. The Stamp program would interact with inventories, research needs, and HMPs on McGregor Range. (See Appendix G or a description of Sikes Act Programs.)

Under Alternative B, BLM would conduct inventories and monitor populations of predators and other potentially destructive animals as a data base for understanding the impacts of animal damage control. BLM would authorize ADC activities on McGregor Range through the District ADC plan. The plan would be prepared by APHIS in coordination with NMDGF based on information provided by BLM for instances of verified economic loss or resource damage. However, population monitoring data for predators and other destructive species would not be used to prescribe ADC actions.

Under Alternative B, the BLM would authorize predator control on McGregor Range through the District ADC plan in coordination with APHIS and NMDGF. All requests for ADC from livestock operators would be submitted by the operator to BLM. BLM would evaluate the request in cooperation with APHIS and determine whether or not to allow control work. All rodent control plans for resource management will originate with the BLM. The Army may submit requests for ADC work to BLM. All actual control work would be accomplished by APHIS. When considering authorization of predator control or rodent control for livestock, game, or rangeland losses, the BLM would analyze the ecological impacts and "reverse economy" of the removal of those animals. The function of those species within the ecosystem and how they relate to the maintenance of the desired habitat or range conditions and other resource uses would be considered, in addition to livestock, game or rangeland losses, in deciding whether to authorize ADC operations. Under this alternative, the ADC plan would be modified to manage the take of target species (with consideration for protection of non-target species and the use of humane methods) and to establish public safety zones. In addition, the BLM would conduct inventories and monitor populations of predators and other potentially destructive animals to provide a data base for analysis.

Under this alternative, hunts on McGregor Range would be conducted only when they are consistent with management goals and objectives, and resource capability and sustained yield consistent with military use of the Range and P.L. 99-606. The goal for game management on McGregor Range is to provide quality hunting opportunities consistent with the military mission, resource capability, and sustained yield.

> Deer: Regular buck only or either sex hunt seasons prescribed by NMDGF would be scheduled during periods consistent with Army mission.
>
> Pronghorn antelope: Regular buck only or either sex hunts prescribed by NMDGF would be conducted in October (after rut but before horn shed) during periods consistent with Army mission.

If hunts must be cancelled due to military missions or for other resource management reasons, other methods of harvest may be utilized during regular hunt periods such as public hunts, NMDGF herd reduction, and transplants where appropriate. No action may also be considered unless habitat destruction is imminent. These methods should be determined on a case-by-case basis, and rely on research, principles of sound deer management, and deer population modeling. Other game and furbearer species may be hunted consistent with management objectives, State regulations, and the military mission.

Recreation

Under Alternative B, public access for recreation purposes generally would be closed, except for hunting during prescribed periods. Big game hunting would only be allowed during the prescribed time periods identified under the Wildlife Section of this alternative. Small, upland game hunting could be conducted during periods consistent with Army mission and access control.

ORV use, when access is authorized by the Army, would be "limited to designated roads and trails" on 608,345 acres. Designated roads would be identified on a case-by-case basis depending on the need for access for the activity involved. The Army impact areas are off-limits to recreation. This designation would be primarily for the public safety and the protection of watershed resources and cultural resources.

The Escondida Pueblo Site (40 acres) would be designated as "closed" to ORV use for the protection of cultural resources.

Visual Resources

Management of visual resources on McGregor Range would continue as described under the Continuing Management Guidance section of this Chapter.

Wilderness

The Culp Canyon WSA would continue to be managed under IMP guidelines, pending Congressional determination. For more detail, see the wilderness discussion under the Continuing Management Guidance section of this Chapter.

Cultural Resources

Cultural resource management would continue as described under the Continuing Management Guidance section of this Chapter.

Under Alternative B, the Escondida Pueblo Site (40 acres) would be fenced to exclude livestock grazing and other surface disturbing uses. The site would be designated as "closed" to ORV use.

The BLM would issue research permits to institutions or organizations for the collection, recovery, and analysis of cultural data.

Fire

Under this alternative, the BLM would have responsibility to suppress and monitor all nonmilitary fires except in impact and military use areas. The Army would have responsibility to suppress or monitor all fires in impact and military use areas and all fires caused by military activities. Both agencies would notify the other of any suppression actions taken on McGregor Range.

If the Army requests assistance from the BLM for any tactical or suppression support needs for Army fire responsibilities, the Army would reimburse the BLM for the costs of any such assistance.

The BLM may use prescribed fire in identified areas (220,800 acres, see Map 2-5) to improve rangeland condition and wildlife habitat. Prescribed burn plans and site-specific EAs would be developed. The areas to be burned would be mapped and flagged. A fire suppression crew would be available to monitor the burns. All prescribed burns would be coordinated with the Army. No prescribed burns would be conducted on dudded lands or lands used exclusively for military activities.

Alternative C

Alternative C places the highest priority on making public land and resources available for use and development by the public. This alternative emphasizes the use of resources and public use while protecting environmental values to the extent required by applicable laws, regulations, and policies. After analysis of the environmental consequences, this alternative was selected as the preferred alternative.

Lands

Under Alternative C, the BLM would issue all public demand nonmilitary leases, easements, ROWs, and other land use authorizations.

Nonmilitary use applications would be received at the BLM Las Cruces District Office. The BLM would process the applications and then submit the proposed actions to Fort Bliss, Real Property Management, for concurrence.

As a general rule, the BLM would be the lead agency except as provided in CEQ 1501.5 for projects that involve both withdrawn and Army acquired lands. Land use authorization for withdrawn land would be issued by the BLM and the Army would issue land use authorizations for Army acquired land.

On ROWs that will serve the withdrawal, the BLM will be the authorizing agency for nonmilitary uses unless the military is the owner of the project.

Access

As discussed in detail under the Continuing Management Guidance section of this Chapter, access to McGregor Range is generally closed and is authorized only on a controlled basis.

Minerals

Locatables

Under Alternative C, McGregor Range would continue to be closed to locatable minerals. At least every 5 years, the BLM will determine, with the concurrence of the Army, which public and acquired lands are suitable for opening to the mining and mineral leasing laws, as per Section 12 of the Military Lands Withdrawal Act.

Leasables

Under this alternative, the BLM would open 100,000 acres (see Map 2-6) to oil and gas and geothermal leasing. Leases could be issued only after Army concurrence. The remainder of McGregor Range would continue to be closed to leasable minerals.

It is difficult to project leasable mineral activity on McGregor Range. The estimated surface disturbing actions per year for a 20-year period for oil and gas activities are summarized in Table 2-3.

TABLE 2-3
ESTIMATED SURFACE DISTURBING ACTIONS
PER YEAR OVER A 20-YEAR PERIOD
FOR OIL AND GAS ACTIVITIES
ALTERNATIVE C

Action	Average Number Per Year	Total Area Disturbed (Acres)
Seismic Lines	<1	5
Oil & Gas Exploration Wells	<1	4
Oil & Gas Access Roads	<1	5
	TOTAL	14

Source: BLM Las Cruces District Files, 1988.

For oil and gas leasing, the BLM has the responsibility for permitting, inspecting and enforcing Notices of Intent (NOIs) to conduct oil and gas exploration for geophysical exploration. The BLM also executes surface management responsibilities associated with Application for Permits to Drill (APD). The BLM is responsible for monitoring all "down hole" work such as assuring aquifer protection, blowout prevention, and approved well completions, recompletions, and abandonments. As a general rule, all public land not managed under the BLM Wilderness Management Policy (USDI, BLM 1981), Interim Management Policy and Guidelines for Lands Under Wilderness Review (USDI, BLM 1983), or where prohibited by other regulations, laws, or stipulations are available for oil and gas exploration, leasing, and development. Appendix C contains the BLM and Army stipulations that would be applied to oil and gas leasing where appropriate.

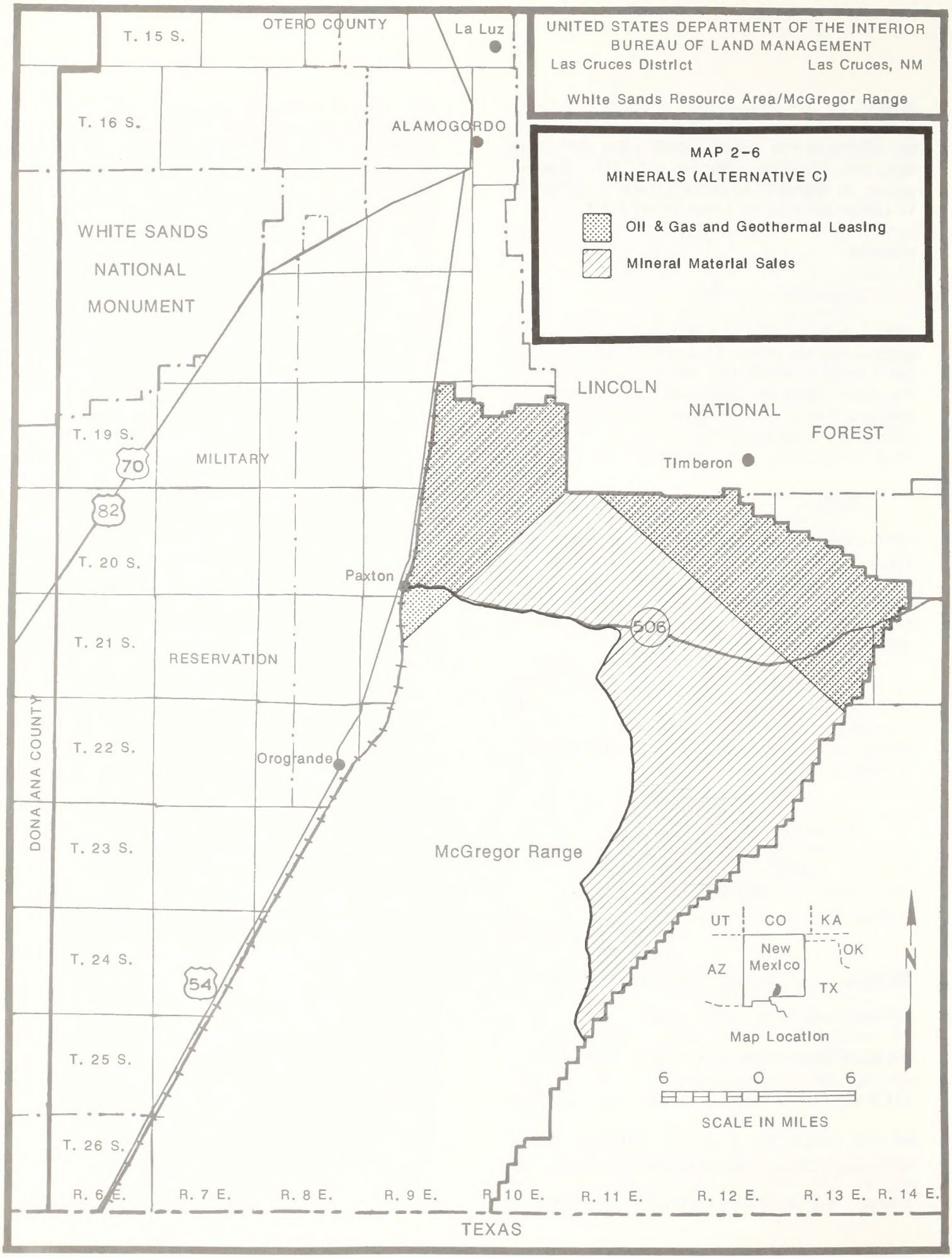
Geothermal resources are managed in a manner similar to oil and gas. Regulations governing this resource are found under 43 CFR 3200.

Leasable minerals other than oil, gas, and geothermal resources, such as coal, sodium and potassium are also governed by 43 CFR and applicable handbooks. There are no economical deposits of such minerals known to occur on McGregor Range.

Salables

The BLM would open 287,360 acres (see Map 2-6) to salable materials disposal. Disposals could be conducted only after Army concurrence. The remainder of McGregor Range would continue to be closed to salable materials disposal. Demands for salable minerals on McGregor Range would probably be limited. It is speculated that there would be about one use authorization for mineral materials per year over a 20-year period. The total amount of surface disturbance would average about 1 acre per year.

Mineral materials, in the form of blow sand, sand and gravel, building stone, and caliche occur throughout the Range. Regulations directing this program are in 43 CFR 3600 and the Mineral Materials Handbook.



Source: Las Cruces District Office Files, 1988.

Watershed

Under Alternative C, watershed management plans would be developed on 48,200 acres in the following areas (see Map 2-7):

- Grapevine (28,440 acres)
- El Paso Canyon (19,760 acres)

These are areas which have high erosion rates due to soil movement by water and air. The primary objectives of the watershed management plans would be to (1) protect, maintain, or improve the quality of the soil and water resources and watershed values, including natural site productivity and surface and groundwater quality and quantity; (2) prevent deterioration of soil and watershed conditions where technically and economically feasible and rehabilitate areas where accelerated erosion and runoff have resulted in unacceptable resource conditions; and (3) prevent or minimize damage to natural site characteristics and economic losses due to floods, sedimentation, or accelerated runoff and erosion. The management actions required to meet these objectives would include contour furrowing and trenching in some areas and the construction of dams and dikes in other areas.

Monitoring studies for watershed would be conducted on withdrawn land over the entire McGregor Range. The objective of the monitoring studies would be to track impacts to soil erosion and condition. The monitoring studies would include coordination with the Army for field trips to identify watershed problem areas and use of approved ground and aerial photography to document soil conditions and changes. The BLM and the Army may coordinate and exchange data to benefit the programs of both agencies and increase the management efficiency on McGregor Range.

Vegetation

Under Alternative C, the area shown on Map 2-5 (220,800 acres) would be considered for prescribed burning. The vegetation objective of the prescribed burning would be to improve rangeland condition by allowing grasses such as tobosa and sacaton to increase, while shrubs such as mesquite, tarbush, snakeweed, and yucca would be reduced. Prescribed burn plans and site-specific EAs would be developed by the BLM. The areas to be burned would be mapped and flagged. A fire suppression crew would be available to monitor the burns. All prescribed burns would be coordinated with the Army. No prescribed burns would be conducted on land containing unexploded ordnances or land used exclusively for military activities.

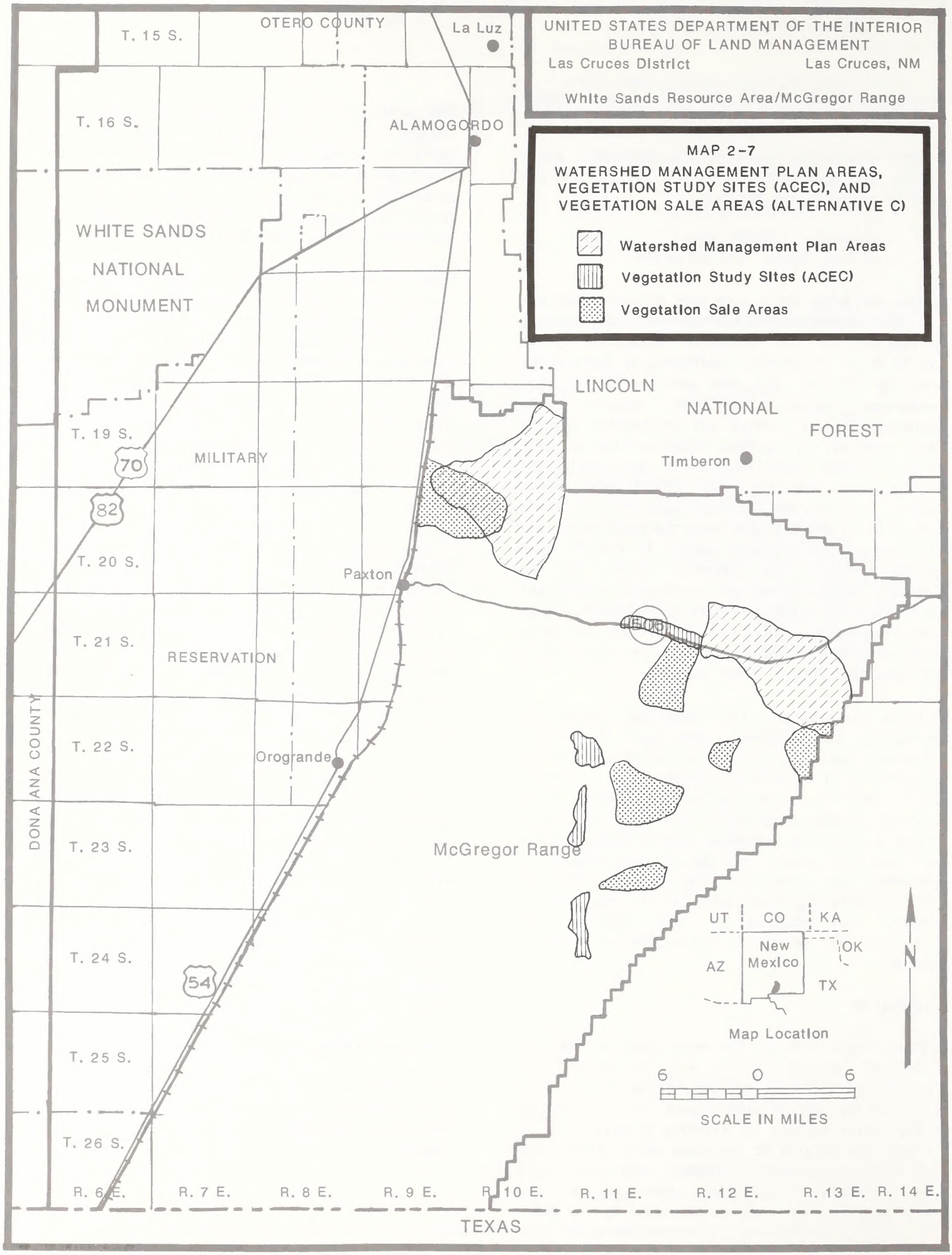
Under Alternative C, the four existing vegetation study sites (3,910 acres) would be designated as the McGregor Black Grama Grassland ACEC. The ACEC would be managed according to the existing Cooperative Agreement between the BLM, the Army, and NMSU (see Appendix F). The location of the four study sites is shown on Map 2-7. The study sites meet BLM's ACEC relevance and importance criteria because the sites contain rare pristine black grama grasslands and there is a need to highlight public and management interest in this unique resource.

Under this alternative, vegetation sale areas totaling 20,940 acres (see Map 2-7) would be designated. The areas contain a variety of yucca, cacti, and other possible ornamentals for landscaping purposes. The areas also contain grama grass for seed harvest. The BLM would determine the kind and number of plants to be harvested and would monitor the vegetation sale areas. Locations of vegetation sale areas would be coordinated with the Army.

Monitoring studies for vegetation would be conducted on withdrawn land over the entire McGregor Range. The objective of the monitoring studies would be to track impacts to vegetation. The monitoring studies would include coordination with the Army for field trips to observe any changes in vegetation and use of approved ground and aerial photography to document vegetation conditions and changes. The BLM and the Army may coordinate and exchange data to benefit the programs of both agencies and increase the management efficiency on McGregor Range.

Livestock Grazing

The current livestock grazing management program would continue, as described in detail under the Continuing Management Guidance section of this Chapter.



Source: Las Cruces District Office Files, 1988.

Wildlife

Under Alternative C, existing forage use for wildlife would continue within the livestock grazing area (see discussion under the Continuing Management Guidance section of this Chapter), and also adequate vegetation would be reserved for wildlife forage and cover outside of the livestock grazing area, in areas consistent with military missions.

The existing Co-Use Area HMP would be revised to include the Mesa Grassland, Mesa Hill, Arroyo Riparian, Desert Hills and Outwash, and Basin habitat sites in the Otero Mesa Antelope HMP (see Map 2-5), consistent with the military mission and activities. The goals of the Otero Mesa Antelope HMP on McGregor Range would be to (1) maintain the grassland habitats of Otero Mesa in good to excellent ecological condition; (2) provide stable habitat for endangered species; (3) provide stable habitat to maintain a pronghorn antelope population of 700 to 750 animals; and (4) minimize disturbance of Arroyo Riparian habitats for endangered species and non-game birds. Objectives of the HMP would include (1) review of the Co-Use Area AMP to recommend adjustments to grazing management as needed; (2) develop additional fencing guidelines if needed; (3) manage the Mesa Grassland and Mesa Hill habitats to benefit pronghorn antelope and grassland threatened and endangered species using prescribed fire (see Map 2-5); (4) minimize disturbance to Arroyo Riparian habitats; and (5) provide stable habitat and populations of black-tailed prairie dogs for ecosystem maintenance and wildlife research purposes and nominate prairie dog populations in Otero County as BLM-sensitive.

The existing Co-Use Area HMP would also be revised for that area outside of the Otero Mesa Antelope HMP area discussed above (see Map 2-5). This revision would have the following objectives: (1) determine the success of implemented management actions for deer and other priority species and establish new objectives which should include but not be limited to maintaining habitat to support 4,000 deer; (2) minimize disturbance of Arroyo Riparian habitats; (3) evaluate factors affecting the deer herd off of McGregor Range and implications related to habitat condition on the Range; (4) manage the Sacramento Foothills habitats for mule deer and other priority species using prescribed fire (see Map 2-4); (5) review the Co-Use Area AMP and recommend adjustments to grazing management if needed; (6) enhance small game populations and habitats; and (7) coordinate the removal of exotic species from the area with the Army and NMDGF and provide public hunts where possible.

A Tularosa Basin HMP would be developed to manage all habitats outside of the livestock grazing area (see Map 2-5), especially the Arroyo Riparian habitats, for priority species (and non-game birds in Arroyo Riparian habitats) in close coordination with the Army and NMDGF.

Objectives of the HMP would be to (1) provide for sustained populations of game species; (2) manage habitats as natural systems and maintain or improve conditions for priority species and non-game species; (3) develop measures to minimize, mitigate, and reclaim damage to Arroyo Riparian habitats, in coordination with the Army; (4) coordinate the removal of exotic species from the area with the Army and NMDGF and provide hunts where possible.

Monitoring studies for wildlife and wildlife habitat would be conducted over the entire McGregor Range. The objectives of the monitoring studies would be to determine populations, density estimates, or indices of priority species and to track sensitive habitats. The monitoring studies would include coordination with the Army for (1) flights for game counts; (2) flights for habitat evaluation; (3) field trips for habitat reconnaisance; and (4) use of approved aerial photography for documentation of habitat conditions. The BLM and the Army may coordinate and exchange data to benefit the programs of both agencies and increase the management efficiency on McGregor Range.

A Sikes Act Stamp program would be established on McGregor Range for regular licensees in coordination with the Army, NMDGF, and New Mexico Game Commission. The Stamp program would interact with inventories, research needs, and HMPs on McGregor Range. (See Appendix G for a description of Sikes Act Stamp Programs.)

Under this alternative, deer hunting on McGregor Range would be conducted during the Fort Bliss Christmas break (typically the last 2 weeks of December) consistent with Fort Bliss mission

requirements and resource management goals, objectives, protection, and based on principles of sound deer management and computer modeling by NMDGF. The goal for deer management on McGregor would be to provide limited recreation opportunities for large bucks while maintaining a productive, balanced deer population and healthy habitat conditions consistent with military missions. Antelope hunts would be conducted annually during October, after rut but before horn shed consistent with military missions. The goal for antelope management on McGregor would be to provide for quality (large buck) recreation activities by maintaining or improving herd size and characteristics. Hunting permits for both deer and antelope would be allocated by NMDGF based on harvest of 40 percent of the adult buck population. Herd reduction hunts may be conducted periodically to reduce the total population. Other game and furbearer species may be hunted consistent with management objectives, State regulations, the military mission, and in areas identified on an annual basis by the BLM, NMDGF, and Fort Bliss as open for hunting. The BLM may use authority under 43 CFR Part 24 to cancel hunts, in consultation with NMDGF, if hunts would adversely affect management and protection of wildlife, habitat, recreation resources, or public safety. Fort Bliss may cancel hunts if conflicts with military missions occur.

Recreation

Under Alternative C, public access would be allowed if and when a hunt is conducted consistent with resource management objectives and other controlled uses. Hunting would only be allowed during the prescribed time periods identified under the Wildlife Section of this alternative.

Recreation uses other than hunting would occasionally be permitted only after Army concurrence. These occasional uses such as sightseeing, hiking, picnicking, and camping, would be controlled by BLM according to the following management practices:

- Adhere to Army check-in and check-out requirements.
- Develop a signing and information program to educate users.
- Provide access in the area by maintaining existing roads in passable condition.

ORV use, when access is authorized by the Army, would be "limited to designated roads and trails" on 608,345 acres. Designated roads would be identified on a case-by-case basis depending on the need for access for the activity involved. The Army impact areas are off-limits to recreation. This designation would be primarily for public safety and the protection of watershed resources and cultural resources.

The Escondida Pueblo Site (40 acres) would be designated as " closed" to ORV use for the protection of cultural resources.

Visual Resources

Management of visual resources on McGregor Range would continue as described under the Continuing Management Guidance section of this Chapter.

Wilderness

The Culp Canyon WSA would continue to be managed under IMP guidelines, pending Congressional determination. For more detail, see the wilderness discussion under the Continuing Management Guidance section of this Chapter.

Cultural Resources

Cultural resource management would continue as described under the Continuing Management Guidance section of this Chapter.

Under Alternative C, the Escondida Pueblo site (40 acres) would be fenced to exclude livestock grazing and other surface disturbing uses. The site would be designated as "closed" to ORV use.

The BLM would issue research permits to institutions or organizations for the collection, recovery, and analysis of cultural data.

Fire

Under this alternative, the BLM would have responsibility to suppress and monitor all nonmilitary fires except in impact and military use areas. The Army would have responsibility to suppress or monitor all fires in impact and

military use areas and all fires caused by military activities. Both agencies would notify the other of any suppression actions taken on McGregor Range.

If the Army requests assistance from the BLM for any tactical or suppression support needs for Army fire responsibilities, the Army would reimburse the BLM for the costs of any such assistance.

The BLM may use prescribed fire in identified areas (220,800 acres, see Map 2-5) to improve rangeland condition and wildlife habitat. Prescribed burn plans and site-specific EAs would be developed. The areas to be burned would be mapped and flagged. A fire suppression crew would be available to monitor the burns. All prescribed burns would be coordinated with the Army. No prescribed burns would be conducted on lands containing unexploded ordnances or lands used exclusively for military activities.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

In developing the alternatives, the following proposals were brought up, discussed, and subsequently eliminated from detailed analysis for the reasons specified below.

Locatable Minerals

Opening McGregor Range to locatable mineral exploration and development was considered, but was eliminated from detailed analysis because it was determined that it could interfere with military missions and violate safety and security concerns. The Mining Law of 1872, which regulates locatable minerals, would not allow the Army to control access adequately if McGregor Range was opened to locatable minerals. Locatable minerals are managed under the Mining Law of 1872 and the Surface Management Regulations (43 CFR 3809). Locatable minerals known to occur on McGregor Range are high-calcium limestone and gypsum. These occurrences are subeconomic at current market prices due to similar occurrences near El Paso, Texas.

Recreation Uses

Recreation uses such as intensive ORV use, unconfined recreation, and developed camping were considered for McGregor Range, but it was determined that these uses would interfere with military missions and violate safety and security concerns. These kinds of recreation opportunities are readily available on public land or U.S. Forest Service land immediately adjacent to McGregor Range.

Law Enforcement

Concern that improved law enforcement is needed on McGregor Range was expressed during the development of this document. The areas of concern include access control, closures, response, and citation/arrest authority. These concerns will be addressed in the Memorandum of Understanding (MOU) for the management of McGregor Range that will be developed between the BLM and the Army upon completion of this land use plan amendment.

CHAPTER 3

AFFECTED ENVIRONMENT

CHAPTER 3
AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the environmental components of McGregor Range that could be impacted by implementing the alternatives. The components that could be affected include lands, access, minerals, air quality, soils, water resources, vegetation, livestock grazing, wildlife, recreation, visual resources, wilderness, cultural resources, and social and economic conditions.

Most of the information in this chapter is extracted from the more detailed Management Situation Analysis (MSA) which is available for public review at the White Sands Resource Area Office.

PHYSICAL SETTING

Topography

McGregor Range has four topographic regions: Tularosa Basin, Hueco Bolson, Otero Mesa, and the foothills of the Sacramento Mountains. Drainage patterns vary within the Range.

The Tularosa Basin is a continuous depression within the Hueco Bolson. It is separated by an indistinct topographic divide at approximately T. 22 S. The Tularosa Basin lies on the western portion of the Range, running in a north-south direction from approximately T. 18 S. to T. 22 S. This area is relatively flat. Most of it has a 0-5 percent slope, with the eastern edge having a general slope of 5-10 percent. The basin slopes slightly to the west. Elevation within the basin varies from 4,000 to 4,200 feet above sea level. Drainage is dendritic through arroyos, washes, and canyons. Two major drainages are Pendejo Wash and Rough Canyon. Water flows westward either evaporating or becoming a source of recharge for the Tularosa (Closed) Basin. No slope aspects are noted for this area.

The Hueco Bolson lies south of, and is continuous with, the Tularosa Basin. Separated from the Tularosa Basin by an indefinite topographic divide at approximately T. 22 S., the Bolson also lies in a north-south direction. The characteristics of the Bolson are very similar to the Tularosa Basin. The area is mainly in the 0-5 percent slope class. The eastern edge has a slope of 5-10 percent. There are two small areas with slopes of 10-30 percent. The Bolson slopes slightly to the west. Elevations within the Bolson vary from 4,068 feet above sea level in the 0-5 percent area to 4,657 feet above sea level in the 10-30 percent area. Drainage in the Bolson is to the west. Some of the major drainage channels are: Hay Meadow Canyon, Martin Canyon, and Mack Draw. With the exception of the two 10-30 percent slope areas, no slope aspects are noted for this section of the area. Slope aspects on those areas of 10-30 percent would be in any direction depending on point of observation.

A north trending escarpment with a slope of 10-75 percent separates Otero Mesa from the Tularosa Basin-Hueco Bolson area. This west-facing escarpment runs approximately through the center of the Range. Otero Mesa occupies a large portion of the eastern half of McGregor Range. It is bounded on the north by the Sacramento Mountains and the Hueco Mountains on the south. The Mesa has a general slope of 0-5 percent with a small area of 5-10 percent slope. The mesa slopes slightly to the east. Elevation on the mesa varies from 4,800 to 5,571 feet above sea level. More rainfall is received on the Mesa than the lower portions of McGregor Range. Water is channeled to the east on the northern part of the Mesa. One major drainage channel in this area is El Paso Draw. The southern portion of the Mesa drains in a southeasterly direction. A major drainage channel in this area is Shilo Draw. The Mesa is basically flat tableland and no slope aspects are noted for this area.

The Sacramento Mountains are a north trending range that extend into the northern section of McGregor. The slope associated with this area varies from 10-30 percent in the foothills to 30-75 percent in the chain of mountains extending south from the Lincoln National Forest boundary. The elevation in this area varies from 4,300 feet above sea level in the lower foothills to 6,960 feet above sea level. Drainage is mainly to the west and south with some to the east. Water is

channeled to the west through such drainages as: Bug Scuffle Canyon, Grapevine Canyon, and Culp Canyon. Drainage to the south is channeled through Wild Cat Canyon, El Paso Canyon, and West McAfee Canyon. Some of the drainage to the east joins the Sacramento River. Several slope aspects are noted for this area and would depend on the point of observation.

Climate

McGregor Range has a semiarid climate with varied temperatures. Summer daytime temperatures are usually 80°F to 95°F, sometimes rising to 100°F. Winter temperatures range from 20°F to 30°F with occasional below zero temperatures. Generally, May through September is frost-free.

The major periods of precipitation occur from July through September in the form of thundershowers which are scattered and localized in occurrence and are of variable intensity. The average annual precipitation rate for most of McGregor Range is 8-10 inches per year.

Prevailing winds are normally 5-10 miles per hour. High intensity winds occur during March and April with recorded speeds of 50 to 60 miles per hour. Terrain plays an important role in determining surface wind direction and speed.

LANDS

Land ownership within McGregor Range includes 608,385 acres of withdrawn public land, 71,083 acres of Army acquired land, and 920 acres of State land.

The Army acquired private land and the BLM acquired State land through exchange for use as McGregor Range and other uses identified by Cooperative Agreements.

The withdrawn land involved was segregated from operation of public land laws by Virtue of Public Land Orders (PLOs) 1470 and 1547. The withdrawals terminated on August 20, 1977 and November 6, 1977, respectively. The Army determined that there was a continuing need for use of the land and filed a withdrawal application (NM-29537) to extend the withdrawals through legislation. The application was filed January 11, 1977 and segregated the land for another 2 years.

There was no specific directive on which agency had the responsibility of authorizing leases, easements, or rights-of-way (ROWs) before 1986 in PLOs 1470 and 1547 or the interim pending legislation for the approval of Public Law (PL) 99-606 between 1977-1986.

The withdrawal to cover McGregor expired in 1977. Even though there was no official withdrawal, McGregor was closed to the operation of the public land laws because an opening order was never published.

Land uses were and still are limited to Cooperative Agreements for grazing and wildlife management. Other uses had to have the approval of the Army and be compatible with military uses.

PL 99-606 specifies "The Secretary of the Interior may issue any lease, easement, right-of-way, or other authorization with respect to the nonmilitary use of such land only with the concurrence of the Secretary of the military department concerned."

The El Paso Electric 345 kv powerline (NM 50852) is the only Right-of-way (ROW) of record on the Range. State Road 506 and the county roads on the eastern portion of the Range are reserved to State and county under the Authority of Revised Statute 2477 (43 USC 932) and accepted for notation of public record under 43 Code of Federal Regulations (CFR) 2802.5, "Special Application Procedures." A water pipeline that is owned by the Army is also of record. ROWs that cross Army acquired land are not noted to BLM records.

Public utilities supporting McGregor Range include water, electricity, and natural gas. The telephone system and wastewater system are operated by the Army.

Nonmilitary land use authorization may have been issued by the U. S. Army Corps of Engineers; but in accordance with PL 99-609, the Department of the Interior may issue land use authorizations only with Army concurrence. The option available for eliminating unauthorized use is to authorize use under the appropriate land use authorizations. Nonmilitary use of subject land can be authorized by BLM only with the concurrence of the Army.

In negotiations with the Army through the Corps of Engineers by letter dated May 18, 1987, "Fort Bliss will consider requests for rights-of-way on a case-by-case basis when fully supported by written justification." By letter dated September 21, 1987, during hunting season all access permits will be obtained from the Provost Marshal.

PL 99-606 segregates land from the disposal authority; Sales (Sec. 203), Recreation and Public Purposes Act (Sec. 212), and Exchanges (Sec. 206) of the Federal Land Policy and Management Act (FLPMA) of 1976.

ACCESS

Public access within and across McGregor Range is limited to State Road 506 and County Roads F037, F048, F049, F050, F051, F052, and E001. (See Map 3-1.)

Access to Timberon, New Mexico is via State Road 506 and County Road E001. Public comments stated support for an all-weather road to Timberon, New Mexico. The Army has stated that they have staffed a request from the Timberon Property Owners Association for an access road through McGregor Range. The BLM will be the agency responsible for authorizing any permits that are needed in conjunction with the project. The Army only considered existing access routes through the Range for paving.

Other public comments included concerns that State Road 506 be kept open to the public. The Army has stated that State Road 506 would only be closed when military missions dictated.

MINERALS

Physiography and General Geology

McGregor Range lies within the Sacramento section of the Basin and Range physiographic province. There are four basic topographic regions on the Range: the southern extension of the Sacramento Mountains in the northern part (about 3,960 to 7,425 feet above sea level); the Otero Mesa, which occupies the eastern portion of the Range (about 4,620 to 5,445 feet above sea level); the Tularosa Basin, which occupies the western portion of the Range (about 4,125 to 4,455 feet above sea level); and the Hueco Mountains in the extreme southeastern portion of the Range (about 4,620 to 5,610 feet above sea level).

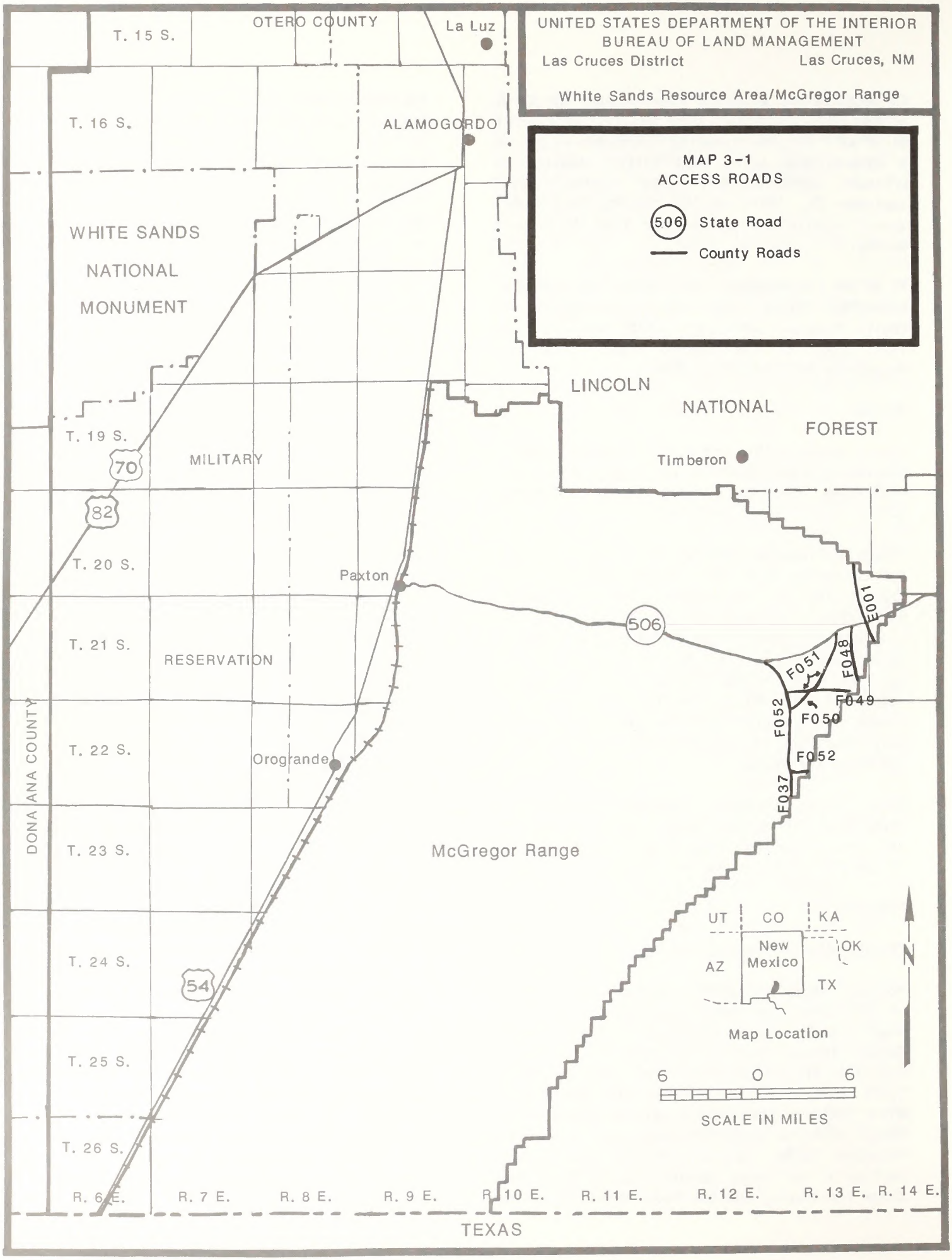
The four topographic regions also represent four geologic elements on the Range.

The Sacramento Mountains represent a typical Basin and Range fault-block. This thick sequence of sedimentary rocks, plainly visible as the steep escarpment on the eastern side of the Tularosa Basin, ranges in age from Precambrian to Permian. The portion of the Sacramento Mountains that lies in the northern part of the Range, represents the southern portion of the main block of the mountain range. Limestone, sandstone, and shale of Pennsylvanian and Permian age are the predominant rock types that occur in this area.

The Tularosa Basin is bordered on the west by the Organ and San Andres Mountains and on the east by the Otero Mesa and Sacramento Mountains. These mountains were once continuous across what is now the Tularosa Basin. Complex orogenic movements within the crust of the earth have produced two major north-south trending faults which have since uplifted the mountains on both sides. At the same time, gravity has caused the central portion to be lowered, thus producing the extensive graben known as the Tularosa Basin. Perhaps as much as 5,000 feet of sediment have accumulated in the basin.

The western edge of the Otero Mesa is a north trending escarpment which is an extension of the Sacramento Mountain escarpment. This fault zone is the major structural feature within McGregor Range, although it is not nearly as spectacular as the western side of the Sacramento Mountains. The vertical displacement along the Otero Mesa fault zone has been much less than the displacement along this same fault to the north. Limestone, sandstone, and shale of Permian age are the predominant rock types that crop out in the Otero Mesa. The formations in the Otero Mesa dip gently to the east and are structurally less complex than the Sacramento Mountains to the north. Folds and faults do occur within the Otero Mesa, but are minor in comparison with those of the Sacramento Mountain area.

The Hueco Mountains form a group of low hills in the extreme southeastern portion of the Range. Pennsylvanian and Permian limestone, sandstone, and shale occur in the area. Tertiary intrusives



Source: Las Cruces District Office Files, 1988.

form a series of low peaks near the Texas-New Mexico border. These intrusives are the only known igneous rocks within McGregor Range.

Mineral Resources

In the past, the Army has managed the mineral material resources on McGregor Range. Since 1957, no mineral activity other than a limited amount of extraction of salables (sand and gravel) has taken place. This resource has been used onsite through a permit system from Fort Bliss but no permits from the BLM. Lately, Otero County has applied for Free Use Permits to extract sand and gravel for maintenance on State Road 506.

Lease applications for oil and gas have been accepted by BLM New Mexico State Office, adjudicated, and sent to the Army for terms and conditions. Fort Bliss has accepted the applications, reviewed them and submitted them to the Department of Army and TRADOC for further action. Fort Bliss has not been supplied with an answer from higher headquarters. These applications have been on parcels acquired by Department of Defense from private landowners and have not been covered by the withdrawals.

Locatable Minerals

Gypsum

From the southern Sacramento Mountains, in the northern part of the Range, to the Hueco Mountains in the southeastern part of the Range, the west-facing Otero Mesa is capped by limestones of the Permian Yeso formation ("yeso" means "gypsum" in Spanish). Gypsum beds are concentrated near the base of the Yeso. The beds may be 10 to 20 feet thick, but have thin laminae of siltstone and limestone.

Below and west of the Otero Mesa escarpment there are two types of west-facing cuestas: (1) those capped by limestone of the Permian Hueco formation; and (2) those capped by reddish-brown siltstone and sandstone of the younger Permian Abo formation. Below this red bed sequence, and above limestone of the Hueco formation, is a 23 to 26 foot-thick bed of impure gypsum.

The purer deposits of gypsum occur in the Yeso formation which crop out in steeper slopes, or on the Otero Mesa. This gypsum could be mined by underground methods which is a very expensive mining method. Other gypsum deposits occur in the Abo-Hueco formation. This gypsum, although not as pure as the Yeso gypsum, could be mined by less expensive open pit methods because it occurs on gentler slopes.

High Calcium Limestone

Extending from the southern Sacramento Mountains, along the base of the Otero Mesa escarpment to the Hueco Mountains is the Hueco formation. It contains limestone with a high percentage of calcium (at least 95 percent $CaCO_3$).

The principal use of high-calcium limestone is as a source of lime, a major industrial chemical. It is also used as a soil conditioner for agricultural purposes. Use of lime is driven somewhat by environmental uses and also influenced by the iron and steel industries.

The use of limestone on McGregor Range, as a source of lime, would greatly depend upon future development and acquisition by industry in the El Paso area. Presently, limestone quarries in the El Paso area have adequate reserves to supply industry for many years. There are areas much closer to El Paso such as the Hueco Mountains, located south of McGregor Range, where reserves of high-calcium limestone could supply the local market for many years. Due to these occurrences, it is doubtful that there will be a need to mine the high-calcium limestone on the Range.

Leasable Minerals

Oil and Gas

McGregor Range has moderate potential for oil and gas. It is known to contain reservoir and source rocks conducive to petroleum accumulations. In the deepest parts of the Range, the total thickness of sedimentary strata may total more than 15,000 feet. Favorable Pennsylvanian source rocks, the probability of stratigraphic and structural traps, and the thickness of the strata in the basin make it a logical target for exploration. Texaco U.S.A. has nominated the entire Range as an "Area of Critical Mineral Potential" (ACMP) for excellent hydrocarbon potential.

Geologically, the area is divided into two sections somewhat similar to the Army's Management Areas (MAs). In the northeastern half, Permian source rocks are exposed at the surface rather than deeply buried as they are in the oil fields of Eastern New Mexico. Structural traps seem to be lacking. In the southwestern half of the Range, the source rocks are buried too deep under the Tertiary valley fill and little is known about the subsurface geology. Potential structures do not show at the surface (Sibbett 1973). This could be resolved with additional exploration which has not occurred on McGregor since 1957. Table 3-1 lists the wells that have been drilled on McGregor Range. All except one were dry holes. The U.S. Geological Survey (USGS) mineral report for the McGregor Range Withdrawal indicates that the Ernest No. 1 encountered small shows of oil and gas. Except for T. 22 S., R. 8 E.; T. 22 S., R. 9 E., Sections 18, 19, and 30; and T. 19 S., R. 10 E., Sections 11, 12, and 13, the USGS classifies all of McGregor Range as moderately potential for oil and gas occurrences.

Geothermal

The western portion of McGregor Range is adjacent to the eastern margin of the Rio Grande Rift. The town of Orogrande is situated at the eastern edge of the rift. Unusually high temperature gradient values in the Orogrande area indicate the possibility of a geothermal resource at depth. New Mexico State University has expressed an interest in conducting geothermal exploration on McGregor Range. Temperature gradient data have been gathered and an indication of geothermal energy exists near Orogrande (BLM 1980). However, high temperature gradient values alone are not necessarily indicative of a usable geothermal resource. An intensive exploration program utilizing geophysical and temperature-gradient data are needed to delineate areas of highest potential. There is little geothermal potential in the northern portion of the Range and limited potential in the southern portion. Development potential for a geothermal resource could be hampered near Orogrande due to the land ownership patterns and limited fresh water availability for direct use applications.

Salable Minerals

Sand and Gravel

Sand and gravel are abundant on the Range, especially near the base of the Sacramento-Otero excarpment and in the arroyos in the northeastern part of the Range. The sources for these sand and gravel deposits are the various sedimentary formations in the Otero Mesa escarpment and the Sacramento Mountains. The primary constituent of the gravel deposits is limestone. Limestones in the Hueco formation are a potential source of aggregate.

TABLE 3-1
PETROLEUM EXPLORATION ON MCGREGOR RANGE

Name of Well	Location	Depth (feet)	Results
Plymouth Federal #1	T. 20 S., R. 9 E., Sec. 15	7,630	dry hole
Sun Pearson #1	T. 20 S., R. 10 E., Sec. 35	4,495	dry hole
Otero #1	T. 22 S., R. 10 E., Sec. 5	1,740	dry hole
McKinney #1	T. 23 S., R. 10 E., Sec. 14	2,181	dry hole
Holland Page #1	T. 25 S., R. 8 E., Sec. 23	736	dry hole
Bechtel Bros. #1	T. 25 S., R. 8 E., Sec. 23	990	dry hole
George Mulvey	T. 25 S., R. 8 E., Sec. 11	264	dry hole
Ernest #1	T. 25 S., R. 7 E., Sec. 20	3,967	oil & gas show
Wilmoth #1	T. 26 S., R. 8 E., Sec. 3	208	dry hole

Source: BLM McGregor Range Withdrawal Mineral Report, May 30, 1980.

The resource has only been used locally for maintenance of State Road 506 and adjoining Range roads. The Army and the Otero County road department have used the sand and gravel near or adjacent to the extraction locations. The quality is such that the resource can be used directly for the construction and maintenance of gravel roads without sizing or processing. The sand and gravel will not likely be needed in the prime market areas (El Paso, Alamogordo) because other, more economical sources can be located closer to market. However, sand and gravel could be economically utilized for the maintenance or reconstruction of U.S. Highway 54 that lies on the western boundary of McGregor Range.

Blow Sand

In the extreme western part of the Range, near the town of Orogrande, and a few miles farther north, there is a relatively large area of mesquite coppice dunes. The reserves of blow sand in this area are very large. Blow sand has been used in the past for aggregate filler, road borrow, and ballfield dressing.

Building Stone

There are areas in the southern part of the Sacramento Mountains and along the Otero Mesa excarpment where the sedimentary strata break into cubic and slab-like proportions. These characteristics could render the rock valuable as a building stone.

Caliche

Caliche is widespread on the Otero Mesa. It occurs just below the surface and probably averages less than a foot and a half in thickness. Caliche can be used for maintenance of secondary roads or mixing with blow sand for excellent road bases or for plating drill pads.

AIR, SOIL, AND WATER RESOURCES

Air Quality

Air quality is good for the McGregor Range area. The only activities within the boundaries of this area that could possibly affect air quality are those performed by the military and vehicular travel on dirt roads.

A study of air quality for this area was made by the Army as part of an Environmental Impact Statement (EIS) prepared in 1975. Two test stations were established.

Station one was located at McGregor Range Camp. Naturally occurring phenomena, winds, and blowing dust are generally believed responsible for high readings of total suspended particulate matter.

Sulfur dioxide, nitrogen dioxide, and carbon monoxide did not exceed New Mexico's ambient air quality standards during the testing period.

Station two was located approximately 20 miles east of Station one. This station was also about 1,300 feet higher in elevation.

Suspended particulates, sulfur dioxide, and carbon monoxide did not exceed ambient standards during the testing period. Heavy metals were also analyzed and none were found to exceed standards.

The Army stated that it was conducting no activities which could account for the high levels of photochemical oxidants and non-methane hydrocarbons. It has been postulated that these pollutants are carried by wind drift from the large metropolitan areas of El Paso, Texas and Juarez, Mexico.

No extremely high quality airsheds were identified for this area.

Soils

Soil surveys conducted by the Soil Conservation Service (SCS) inventoried soil types and gathered interpretive data about the soils within McGregor Range. These data are compiled in Soil Survey of Otero County, New Mexico (June 1981).

The soils of McGregor Range are closely related to the natural units. Thin, stony soils predominate in the mountain foothills, canyonlands, and rimlands and are generally associated with rock outcrops. Soils of the Mesa range from thin and loamy over caliche or bedrock to deep and loamy. Soils in the alluvial fans and bolson units are generally loamy or sandy, depending on geologic and topographic setting.

Three Major Land Resource Areas (MLRAs) occur in McGregor Range (Soil Conservation Service 1981). The MLRAs are a classification index to separate geographic areas on the basis of topography, geology, and climate, including temperature and moisture regimes, both of which have a major influence on soil development. Elevation ranges from 3,800 to 7,450 feet. Most of McGregor Range occurs at lower elevations in the Southern Desert (SD-2 and SD-3) MLRA, with soils forming in the aridic (dry) moisture regime and thermic (warm) temperature regime. Areas at higher elevations

near the Lincoln National Forest in Otero County are in the Canadian-Pecos Plains (CP-4). Soils in this MLRA formed in an area receiving higher annual precipitation and with lower mean annual temperatures.

Soil Erosion

Wind and water erosion are the most significant processes presently affecting the soils of McGregor Range. Estimates of the rate of wind erosion under current conditions have been made using the wind erosion equation. The methodology and results are given in Allen and Anderson (1980). Three units are considered to have no significant wind erosion: mountain, foothills, canyonlands, and rimlands. The mesa and alluvial fans are subject to moderate erosion rates, while soil movement in the Bolson is very high as indicated by coppice dunes around mesquite shrubs.

Estimates of water erosion in the livestock grazing area have been prepared using the Pacific Southwest Interagency Committee Methodology (PSIAC 1968). The rate of sediment yield is between 0.3 and 0.5 acre-feet per square mile per year throughout the entire area. The procedures followed and the results obtained are presented in Allen and Anderson (1980).

Some erosion control work has been done on the north end of the Range. There is currently no watershed plan for the area. A watershed plan would have to be developed before any major erosion control work is done on the Range.

Erosion Condition and Trend

Erosion condition varies considerably over the planning area. For the most part, erosion condition is directly correlated to vegetation and soil types. Areas covered by good grassland vegetation have relatively low amounts of soil erosion. Areas covered by brush type vegetation, mesquite and creosotebush, have higher amounts of erosion. Topography has some influence on the extent of the erosion. Most of the steeper rocky hills have only slight erosion; however, during periods of heavy thundershower activity large volumes of runoff build-up rapidly and move downward to lower elevations causing gully erosion. Many of the draws have been cut by gullies although presently erosion is slight.

Areas covered by creosotebush have very little ground level vegetation cover to retain precipitation at the point of occurrence, therefore, during periods of heavy rainfall runoff is excessive from these areas. In the western part of the planning area where military activity is greatest, numerous roads have been constructed in such a manner that they have become channels for runoff causing a considerable amount of soil erosion. Erosion in the dune type mesquite vegetation is primarily caused by wind. Most of the soil movement is localized, from dune to dune, but on hot windy days blowing dust particles rise to the atmosphere which could significantly lower air quality.

Water Resources

Surface Water

Quantity

The Sacramento River is a perennial stream north of the Range, with an average annual flow of about 3,000 acre-feet (Titus 1967). Diversions from the river provide water to Rim Tank, near Timberon. The tank is also supplied via pipeline from Carrizo Spring, located in the southern part of Lincoln National Forest. A pipeline carries water from Rim Tank into the area with branches reaching all upland grazing units except Unit 8. The Orogrande municipal pipeline originates from Sacramento Lake, and carries an undetermined amount of water through Units 2 and 3.

During the spring snowmelt season, or in response to summer storms, the Sacramento River usually flows in the Range through Unit 8. Earthen dams have been built across many channels and swales, creating small reservoirs or tanks. Some tanks with naturally fine-grained soil in the bottom may hold the infrequent runoff for several months, creating an important source of livestock and wildlife water. The water source cannot be relied upon to provide yearlong supplies. Runoff normally occurs during the summer months when heavy thundershower activity is greatest. However, many are situated on coarser soils and runoff is held for only a few days or weeks before seeping into the subsurface.

The annual stream flow in the Range is equivalent to 1 to 2 inches of runoff per year in the

mountainous areas, and 0.1 inch per year at lower elevations (SCS 1973). A methodology developed by SCS can be used to estimate the magnitude of the different flood flows which make up most of this runoff. Flood and sediment damage in the planning area can occur as a result of intense precipitation during thunderstorms in the summer.

Quality

The amount of sediment carried by runoff directly affects surface water quality. Earthen stock tanks receiving runoff require occasional removal of accumulated sediment. Sediment yields are estimated to be between 0.3 and 0.5 acre-feet per square mile per year throughout the entire area. Although surface waters on the livestock grazing area are generally hard and alkaline, quality is adequate for wildlife and livestock use. A more comprehensive listing of water quality data is presented in Jenkins and McGough (1980). The tanks often contain some coliform bacteria of natural origin; fecal coliforms are also present. The bacteria levels could cause problems if the supplies were used for human drinking purposes without disinfection.

Groundwater

Quality

Groundwater occurs in two distinctive types of aquifers (water-bearing formations) within McGregor. The western part of the area is underlain by basin-fill sediments (the Bolson), which receive considerable recharge from the infiltration of runoff. Yields exceeding 1,000 gallons per minute (gpm) may be obtained in the coarser material high on the alluvial fans, but are less than 100 gpm near the fan toes. Conditions in the Bolson are largely unknown, but the fine-grained nature of the deposits would be a severe limiting factor in terms of well yield and water quality. The water table is at least 250 feet below the surface.

The second aquifer consists of the older sedimentary rocks which underlie the upland portions of McGregor. Few wells have been completed in this area, and little is known about the hydrology of the limestones and sandstones which are potential water sources. Two existing wells are around 1,000 feet deep and are poor producers. The limited yield in these deep wells may be caused by small pumps and large lift, since the aquifers being tapped are good producers in the northeast portion of the Range. The lack of geologic and geohydrologic data in the upland area makes estimates of groundwater availability in this area difficult. Groundwater is likely to be available from properly designed and constructed wells in most of the area. The depth to water and well yields will be highly variable.

Quality

Quality of water in the western aquifer deteriorates from reasonably good near the recharge area (upper alluvial fans) to very poor and saline beneath the Bolson. The upland groundwater is hard, but otherwise suitable for most uses. However, it can be expected that any water which has passed through the Yeso Formation underlying the Mesa would be of poor quality.

Availability

Water for wildlife and livestock consumption is available from several sources. The Army has reportedly filed for water rights to 60,000 gallons per day from the Sacramento River and 50,000 gallons per day from Carrizo Spring. This is equivalent to approximately 123 acre-feet per year. This water is piped to Rim Tank, which has a storage capacity of about 9.6 acre-feet. The water stored in Rim Tank supplies an extensive pipeline and storage system scattered throughout the grazing units. This system includes approximately 100 miles of pipeline, over 100 drinking troughs, and 30 tanks with storage capacity of nearly 3,000,000 gallons.

Other sources of water include six wells capable of producing over 14,000 gallons a day and approximately 70 earthen tanks with storage capacity of about 170 acre-feet of water. In addition, about 1,850 gallons a day can be used from the Orogrande pipeline to provide water to drinking troughs in parts of three grazing units. Also, eight catchment type devices with storage have been constructed to provide water for wildlife in areas where other sources are not available.

Water evaporation is estimated to be approximately 36 acre feet annually.

The amount of water available for consumption by livestock and wildlife would range from 90,000 to 120,000 gallons a day or 101 to 135 acre-feet a year depending on the amount of runoff into earthen tanks.

All of these water sources, pipeline systems, and storages are located or available for use by grazing animals in the livestock grazing area. Some earthen tanks, which have not been maintained or cleaned out in years, do provide some water for wildlife in the non-livestock grazing area of the Mesa.

Uses

Based on the number of livestock authorized to graze over a period of 20 years, water consumption has varied from year-to-year depending on the number of animals and length of grazing period. Numbers of wildlife have been more constant and water consumed by deer and pronghorn antelope would be more consistent than that consumed by livestock.

Due to the fact that some of the grazing units are only grazed for 9-month periods, the amount of water consumed by livestock is greater at certain times of the year and is not constant from day-to-day.

VEGETATION

Information on the vegetation in the livestock grazing area was obtained primarily by field studies during the summer of 1979. The study methodology and results are presented in a report by Pettit et. al. (1980). The data are adequate to describe regional patterns in the plant cover of the livestock grazing area.

Natural Units

The major vegetation types on McGregor Range are associated with specific natural units, as described below (see Map 3-2, Natural Units).

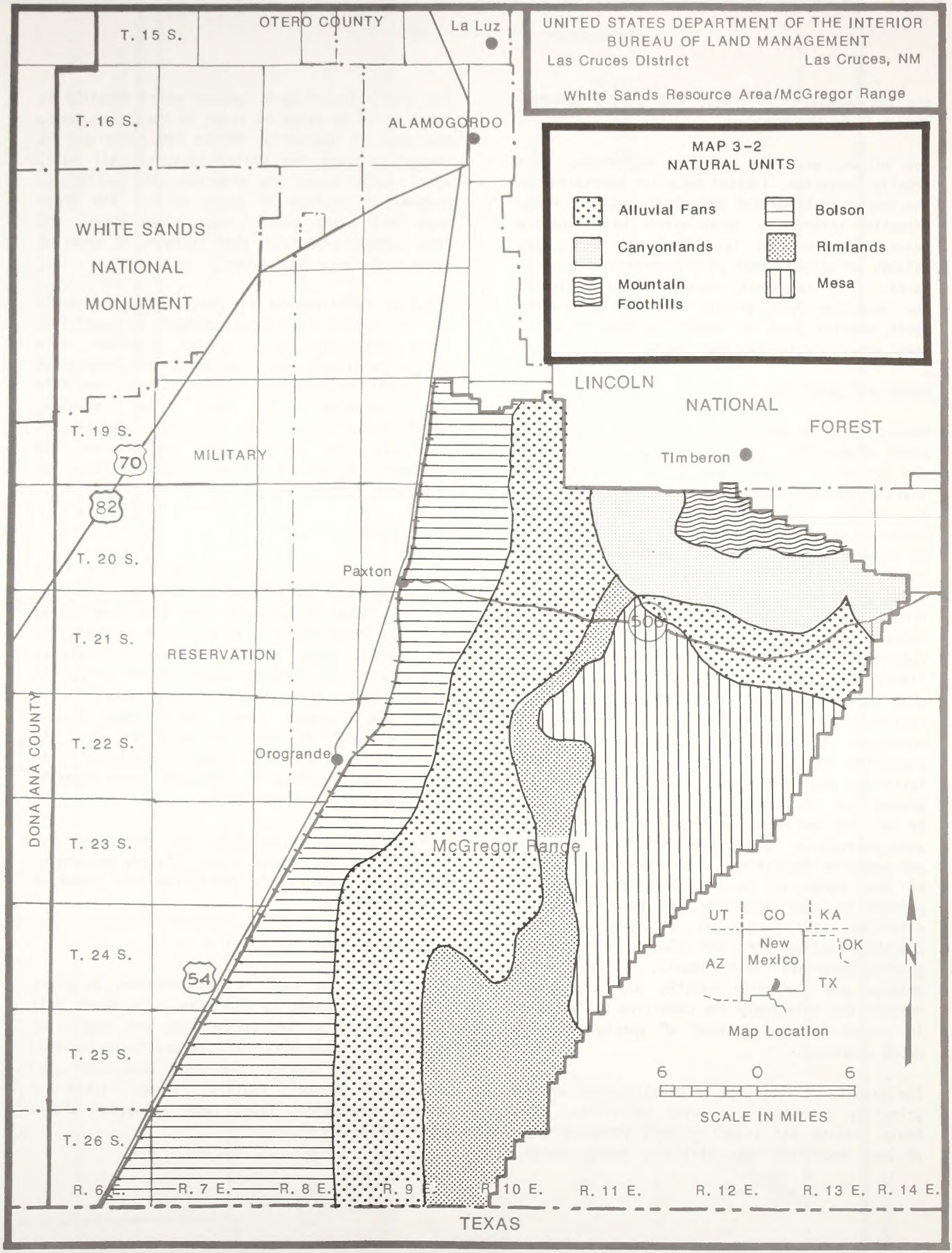
The Mountain Foothills broadly correspond to the pinyon-juniper type of vegetation. Dominant tree species in the area are pinyon pine, alligator juniper, and one-seed juniper. Where conifers are not dense, several shrubs are common, such as oaks, mountain mohogany, and algerita. Occasionally sumacs, rose, and desert ceanothus are found. The herbaceous layer observed during the field surveys was highly variable with muhlys being most abundant. Blue grama and Arizona threeawn were common on many sample sites. Feathergrass was found in shaded positions.

The Canyonlands are characterized by mountain mohogany. At lower slopes, goldeneye and mariola are most abundant in the shrub layer. Unslope, and on south-southwest exposures, century plant and ocotillo are more important. Mountain mohogany is dominant on north exposures and ridge crests. Desert ceanothus, baccharis, Apache plume, and desert willow are also found in this unit. Grasses consistently found include sideoats grama, curlyleaf muhly, needlegrass, alkali sacaton, and threeawns. The understory is often comprised of forbs if disturbed, and sacaton if not disturbed. Alkali grass is dominant along arroyo banks which lack shrubby growth.

Mesa vegetation consists of a grassland with varying amounts of shrubs interspersed. Hairy grama is important on limestone hills. Black and blue grama are the most extensive since they occur on most soils within this natural unit. Feathergrass occupies the gravelly ridges and slopes on the southern part of the unit. Sideoats grama is often an associate of feathergrass. The remaining species are usually on finer textured soils, and in the case of tobosa, occur on overflow areas.

The Rimlands is a complex ecological area with a large number of community subtypes. While the topography is similar to Canyonlands, the vegetation is creosotebush-mesquite. Grass cover is high, partially because the area has not been grazed for at least 14 years. Wildfires have been common in the unit and less shrubby cover exists where these fires have occurred. The more common plant communities are: honey mesquite - alkali sacaton; whitethorn - grama - burrograss; soaptree yucca - winterfat - sideoats grama; creosotebush - tarbush - bristlegrass; and blue grama. Marestail is locally dominant in overflow areas or on disturbed sites.

On Alluvial Fans, the creosotebush subtype predominates. Creosotebush tends to form dense stands, particularly along arroyos. Tarbush is often found down-slope on finer soils. Grass cover is generally low. The more common grasses



Source: Las Cruces District Office Files, 1988.

are burrograss, fluffgrass, and alkali sacaton. Annual forbs are numerous.

The Bolson, with its mesquite vegetation, is a fragile ecosystem, limited by scant precipitation and coarse-textured and gypsiferous soils. Honey mesquite occurs in association with coppice dunes. Interspersed throughout the dunes are islands or mixed stands of creosotebush, soaptree yucca, sand sagebrush, and fourwing saltbush. The most abundant grasses are the dropseeds. Toxic species such as desert baileya occur in areas where grazing has been heavy.

Rangeland Condition

Condition is a measure of the degree to which plant communities in a given range site resemble the potential climax vegetation of that site. Grazing pressure, among other factors, can cause a change in condition from excellent (near-climax) to good, fair, or poor (dominated by species which are minor components or even absent in the climax community). As condition moves to a lower seral stage, the vigor of key forage species often declines and the amount of forage yield available to livestock may be reduced. However, as noted in Pettit et al. (1980), condition classes do not always relate to grazing history, nor are they necessarily an indication of whether or not a given plant community is healthy and productive. Map 3-3, shows the location of areas in excellent, good, fair, and poor condition. Most of the presently grazed area is in good or fair condition. Much of the fair and poor condition land is associated with burrograss, broom snakeweed, creosotebush, and mesquite vegetation. Approximately 8 percent of the Range is in excellent condition, 42 percent in good condition, 46 percent in fair condition, and 4 percent in poor condition. Condition ratings are not always indicative of grazing potential. For example, the mesa forage grasses are generally healthy and productive, despite the relatively low condition rating which is caused by the presence of species such as broom snakeweed.

The effects of livestock on condition are evident primarily at sites near water facilities, where heavy grazing and trampling have produced areas of poor condition near virtually every trough. The area affected by a typical water facility is about 25 to 50 acres in size; in the Canyonlands, the area is typically 100 to 200 acres and is elongated along the valley bottoms. All told, about 4,400 acres are affected (88 facilities, assumed to average 50 acres each). The areas have less plant cover, lower plant vigor, and less herbage production than is found in areas at greater distance from water.

Previous construction of rangeland improvements has not caused significant changes in condition. Scars associated with buried pipelines have healed relatively well, although the vegetation is mostly early seral species rather than late seral species. At most other previous construction sites (for example, corrals and troughs), the effects of construction are generally masked by more recent effects of trampling and grazing.

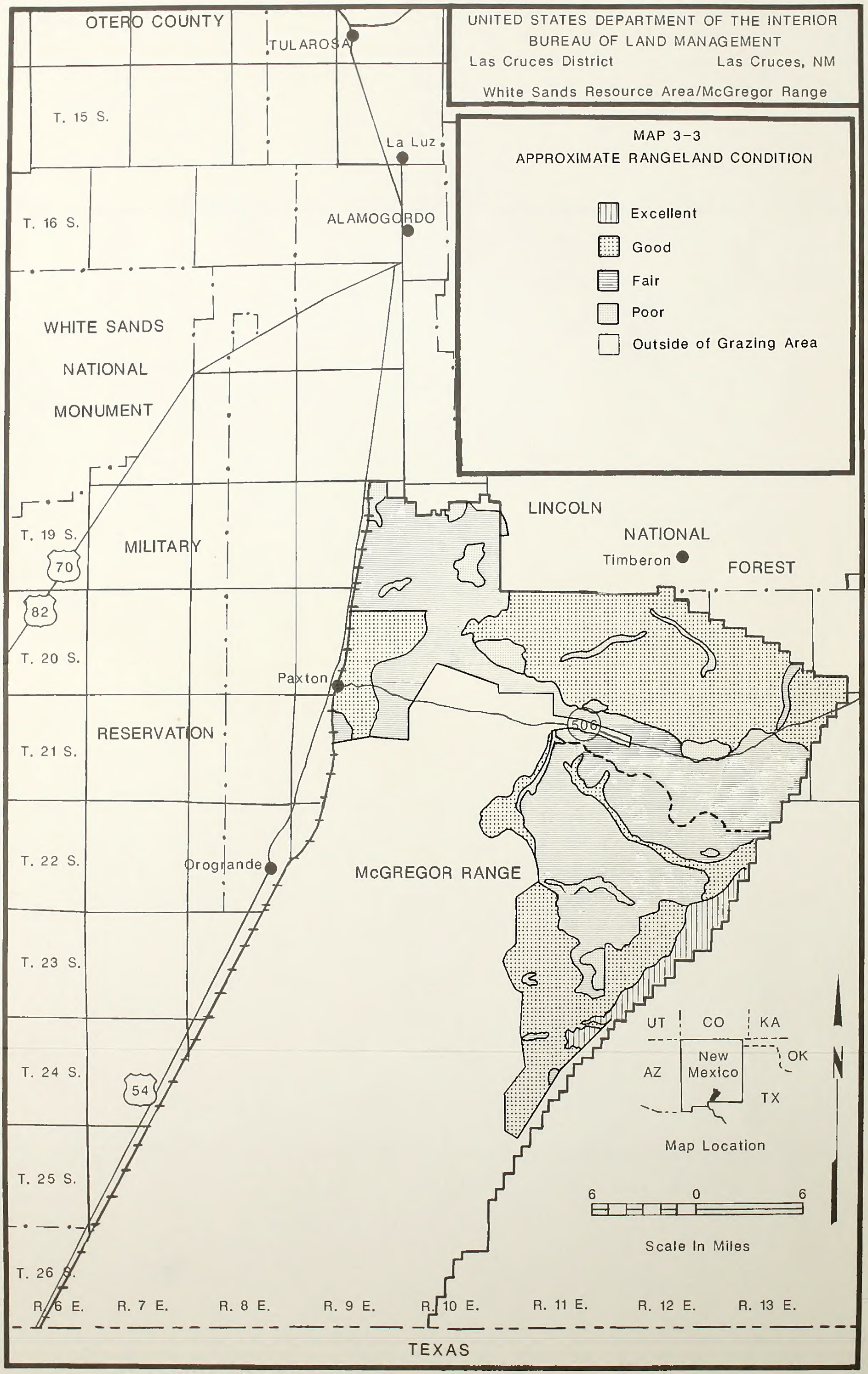
Range Trend

Trend is a measure through time of changes in rangeland condition. Qualitative evaluations of visually observed apparent trend were made during the 1979 field studies, as discussed in Pettit et al. (1980). These evaluations indicate that, at the time of the survey, about 190,000 acres (70 percent of the livestock grazing area) in 14 units had a stable trend. Upward trend (toward improved condition) occurred on 27,000 acres (10 percent), without any clear relationship to grazing or other causes. Downward trend occurred on 54,000 acres (20 percent).

BLM data from trend plots on the Range are insufficient to provide a quantitative measure of trend, but support the conclusion that trend is stable overall.

Vegetation Types

Each vegetation type is characterized by plant communities common to its area. The Range will be described by vegetation type and vegetation subtype starting with the Tularosa Basin lowlands and working towards the mesa and into the Sacramento Mountain foothill region. Table 3-2 shows vegetation types and subtypes within McGregor Range.



Source: Las Cruces District Office Files, 1988.

TABLE 3-2
RANGE VEGETATION TYPES AND SUBTYPES

TYPE	SUBTYPE	ACRES
Shrubs	Mesquite and Sand sagebrush	133,890
	Creosotebush	235,825
Grass	Shortgrass and Midgrass	201,670
Conifer	Pinyon-Juniper	37,000
Total		608,385

Source: BLM Las Cruces District Files, 1988.

Shrubs

Mesquite-Sand Sagebrush

The mesquite-sand dunes area is inclusive of the sand sagebrush subtype. The entire area represents about 17 percent or 133,890 acres of the Range. It takes in a considerable acreage and offers potential for sufficient forage for livestock and wildlife in the future. Associated major shrubs include fourwing saltbush, ephedra, soaptree yucca, and broom dalea. Grass species of the sand country include mesa dropseed, spike dropseed, sand dropseed, alkali sacaton, sacaton, and bush muhly. Outside of the sand sage area, mesquite is the dominant species. Forbs are fairly abundant, but grasses are scarce.

Creosotebush

The creosotebush subtype clearly represents the true desert shrub classification. It represents about 37 percent or 235,825 acres of McGregor Range. It has often been described as the most common and widely distributed shrub in the desert (Branscomb 1956).

Creosotebush, often called "Greasewood," is worthless as livestock forage. However, it is a major indicator species of the Lower Sonoran Life Zone. Associated shrubs include mesquite, tarbush, broom snakeweed, whitethorn, spiny allthorn, mariola, condalia, cutleaf brickellia, Apache plume, desert willow, burrobrush, littleleaf sumac, pale wolfberry, yucca species, ocotillo, and greythorn. Greythorn reportedly occurs throughout the basin lowlands. There are a few good-sized shrubs growing in the area between Culp Tank No. 5 and Sand Tub in Grazing Unit 3.

Common grass species occurring within the creosotebush subtype are black grama, bush muhly (in some places), tobosa, Aristida spp., plains bristlegrass, alkali sacaton, sacaton, fluffgrass, and burrograss.

Grass

Shortgrass and Midgrass

The grass type covers or encompasses nearly 201,670 acres and represents 33 percent of the Range. It is comparable to the two ecozones described by the U.S. Army, Environmental Hygiene Agency (AEHA) as "rimlands-yucca-grassland" and "mesa-grassland." The area takes in the mesa proper and the escarpment frontal zone. The escarpment is incised with numerous, deep-cut arroyos and draws, while the mesa proper is flat to rolling terrain.

Species include black grama, blue grama, hairy grama, sideoats grama, tobosa, alkali sacaton, vine-mesquite, Aristida spp., poverty threeawn, red threeawn, lovegrass, sand muhly, curlyleaf muhly, sand dropseed, cane bluestem, New Mexico feathergrass, fluffgrass, burrograss, and ring muhly.

Shrub species include soaptree yucca, datil yucca, javelina bush, knifeleaf condalia, spiny allthorn, ephedera, littleleaf sumac, feather peabush, slim leaf goldeneye, prickleleaf dogweed, ocotillo, whitehorn, creosotebush, mesquite, tarbush, and snakeweed.

Conifer

Pinyon-Juniper

The pinyon-juniper subtype on McGregor Range is confined to the northern portion of the Range in Unit 4, parts of Unit 5, and a small portion of

Unit 8. This subtype covers approximately 37,000 acres and represents about 6 percent of the total land area. Elevations vary from 5,400 to 7,100 feet and is mainly rugged foothill country. The Range is rather highly productive, and average precipitation is adequate to grow a variety of grasses and shrubs. Only in a few areas are the trees heavily concentrated.

From the north half of grazing Unit 5 and all the way up through grazing Unit 4, shrub species include pinyon pine, one-seed juniper, alligator juniper, mountain mahogany, desert buckbrush, wavy leaf oak, fendlerbush, desert rose, California brickellia, and Mexican silktassel.

Ponderosa pine occurs only in the extreme northern portion of the area near Rim Tank located in T. 19 S., R. 12 E., Sections 33 and 34.

The grass species in the area also exhibit considerable variation. Grama grasses dominate the lower foothill country, while species of the genera Muhlenbergia and Stipa dominate the higher elevations. Curlyleaf muhly, mesa muhly, New Mexico muhly, pine muhly, littleawn needlegrass, New Mexico feathergrass, wolftail, sideoats grama, and plains lovegrass are the major forage species. Pinyon ricegrass and spike muhly though highly palatable species, occur only in small amounts and do not contribute significantly to the forage resource.

Vegetation Products

McGregor Range does not support any commercial timber stands. Pinyon-juniper subtype on McGregor is confined to the northern portion of the Range in units 3, 4, 5, and a small part of 8. This subtype covers approximately 37,000 acres and represents about 8 percent of the total area. Only in a few areas are the trees heavily concentrated. They are generally scattered. Ponderosa pine occurs only in the extreme northern portion of the Range (near Rim Tank). Ocotillo is often found on lower dry hillsides and slopes. Yucca species are found throughout the Range. They are found more in sandy and loamy range sites. Like the Pinyon-juniper subtype, both yucca and ocotillo are found in patchy areas.

Currently, there is no harvesting of any vegetation products by the public. Some interest has been expressed by the public for wood cutting and the commercial harvesting of black grama seed.

Study Sites

A major portion of the livestock grazing area is known for its unique stands of black grama. These areas are considered to be ecologically significant. The BLM, Fort Bliss, and New Mexico State University established four study sites located in the livestock grazing area (see Map 2-2). The sites are used for studying black grama ecosystem processes.

Special Status Plant Species

The endangered plant species that may occur on McGregor Range are described below.

Kuenzler's Hedgehog Cactus - Echinocereus fendleri var. kuenzleri - Federal Endangered, State Endangered

This plant is known from areas within 30 miles to the north of McGregor Range. Although soil mapping units on McGregor differ from those at the type locality, there remains potential for occurrence of the plant in the limestone pinyon-juniper hills of north McGregor. Taxonomists are currently examining the possibility that this species is synonymous with E. hempelii which occurs in Mexico. Should the two species be synonymous, it would also increase potential for occurrence on McGregor.

Lloyd's Hedgehog Cactus - Echinocereus lloydii - Federal Endangered, State Endangered

Lloyd's hedgehog cactus is a hybrid species which occurs locally in the McGregor area. The closest known location is in the Jarilla Mountains north of Orogrande within 2 miles of the Range. The species is under taxonomic investigation at present and appears that the local populations are more correctly referred to as Echinocereus roetteri, whose type locality is in El Paso. Potential exists for occurrence of this species in the Hueco Mountains area. Primary reasons for listing were potential extirpation of the type locality of E. lloydii near Ft. Stockton, Texas. The local form (E. roetteri) may be sufficiently restricted to warrant separate listing in the future. At present E. roetteri is considered synonymous with E. lloydii.

Villard's Pincushion Cactus - Escobaria villardi; - State Endangered

This species is endemic to south-central New Mexico; specifically to the Sacramento Escarpment near Alamogordo. It occurs on Silurian-Ordovician-Cambrian limestone and possibly dolomite between 4,750 and 6,000 feet elevation. The plant has not been verified as occurring on McGregor; however, there is a suspected location in the limestone hill of the west face of Culp Peak on the north end. Reasons for listing are limited to potential for overcollection.

Sneed's Pincushion Cactus - Coryphantha sneedii var. sneedii - Federal Endangered, State Endangered

This plant, a possible relative of Escobaria villardii, is known to occur in the Franklin Mountains and on both the east and west slopes of the Guadalupe Mountains. Although it has not been recorded from McGregor, potential exists for occurrence in any of the limestone hills. Like E. villardii it is limited to Silurian-Ordovician-Cambrian limestone. Reasons for listing are restricted occurrence and a one time fear of extirpation resulting from road construction in the Franklin Mountains. It was found to be more common than was thought at the time it was listed.

Sand Pricklypear - Opuntia arenaria - Federal Candidate Category 2, State Endangered

This pricklypear was believed to be restricted to the sandy habitats between El Paso and Las Cruces. Recently one plant has been verified from the east side of the Jarilla Mountains at Orogrande. There are 13 unverified locations on McGregor Range in sandy habitats both in the Mesa Grassland and Hills Habitats and the Basin Habitat. The reason for listing was its extreme rarity and habitat degradation near El Paso.

Desert Rose - Rosa stellata - Federal Candidate Category 2

This plant appears to be taxonomically controversial and subsequent listing depends on the taxonomic decision of what to call it. There are several forms in which it occurs including Rosa stellata subsp. stellata, R. s. subsp. mirifica, and R. s. subsp. mirifica var. erlansoniae (Martin and Hutchins 1980). Leaflets on McGregor plants are three foliate indicating R. s. spp. stellata. However, more than one form may be present. It is apparently widespread throughout the area, including the pinyon-juniper habitats of McGregor Range. It is usually found in densely vegetated canyon situations.

Gray Sibara - Sibaria grisea - Federal Candidate Category 2, State Endangered

This annual mustard is an inhabitant of north facing overhangs of limestone cliffs at 4,500 to 6,000 feet elevation. To date no populations have been found on McGregor although potential habitat exists.

Common Button Cactus - Epithelantha micromeris - State Endangered

This small cactus is uncommon on cobbly limestone soils of the higher elevations of the mountain foothills of northern McGregor Range. It is not found in the pinyon-juniper zone.

Grama Grass Cactus - Toumeya papyracantha - Federal Candidate Category 2, State Endangered

This species until recently was known only from areas around White Sands National Monument and north toward Albuquerque and Santa Fe, and west into Arizona. A May 1988 observation established a range extension to the Salt Flats 45 miles southeast of McGregor Range. This places McGregor Range within the area of potential occurrence. Habitat for this species is sandy and gypsiferous soils. Vegetation associates on sandy soils are grama grass species (black and blue grama). Vegetation associated with the plant on gypsiferous soils is alkali sacaton and fourwing saltbush. It is highly likely that McGregor Range contains this species in the grama grasslands of Otero Mesa.

LIVESTOCK GRAZING

Prior to 1957, McGregor Range had a grazing history similar to that of much of the southwestern U.S. When the Range was withdrawn in 1957, the Commanding Officer at Fort Bliss did not allow grazing. A Co-use agreement allowing grazing was signed in 1966.

Grazing was initiated in 1967. BLM has developed 14 grazing units ranging in size from 8,000 to 32,000 acres, encompassing 271,000 acres (see Map 3-4). BLM developed a management program which allows grazing for 9 or 18 months at a time. Grazing runs from October to June for the 9-month units and from October to March on the 18-month units. Units put on 18-month grazing seasons are done in order to increase utilization on plant species that are most palatable in the summer. In a typical year 4,500 cattle have utilized the Range which is equal to about 40,000 AUMs of livestock grazing. Livestock grazing contracts will continue to be issued for 1 to 5 year periods for 9 to 18 month grazing seasons, depending on monitoring studies.

The livestock grazing use within the existing units is contracted to the highest bidder each year by competitive bidding at a public auction, under the provisions of the Federal Material Disposal Act of 1947, as amended. The entire McGregor Range grazing program is funded only by those monies generated by the livestock forage sales contracts. In recent years, bids have been around $4.50 per AUM and total income has ranged between $119,000 and $200,000 per year. The operating budget is equal to the gross receipts.

Budget costs include BLM administration, maintenance, rangeland improvement and development, parts and supplies, salaries, and per diem for the McGregor Range Crew. Most units are used for cow-calf operations; those with rough terrain are usually designated for both cow-calf and yearling use. Decisions regarding season of use and allowable AUMs are based on monitoring studies. Current management practices have resulted in a grassland and shrubland environment with a grazing capacity equal to or greater than most comparable land elsewhere in New Mexico.

All the grazing units have dirt tanks which provide a source of water. These tanks help even out livestock distribution. Waterings are located throughout the units to help even out livestock distribution. Problems associated with distribution will show up in the utilization studies.

Range fires are a constant threat. They are generally caused by missile shrapnel (hot pieces of exploding metal) and sometimes burn hundreds of acres of late seral status grassland.

Parts of units 9 and 13 are in what is known as "No-Man's Land" which is a laser impact area. This is a restricted area. No one is allowed into the area without permission and an escort by the military.

Field studies are completed yearly to determine utilization of forage resources, in the livestock grazing area of the Range.

Areas of heavy utilization are limited in extent. These areas occur primarily near watering facilities and along the drainage ways of the Canyonlands natural unit. Not all such areas are large enough to appear on Map 3-5, Existing Forage Utilization. This map shows average utilization by pasture for the past 4 years. Many portions of the existing pastures have light or slight utilization, especially near unit boundaries at distances greater than 2 miles from water, and in steeply sloping or inaccessible locations. For the 14 units as a whole, utilization is rated as light. Key forage species include black grama, needlegrass, blue grama, sideoats grama, tobosa, mesa dropseed, curlyleaf muhly, and New Mexico feathergrass.

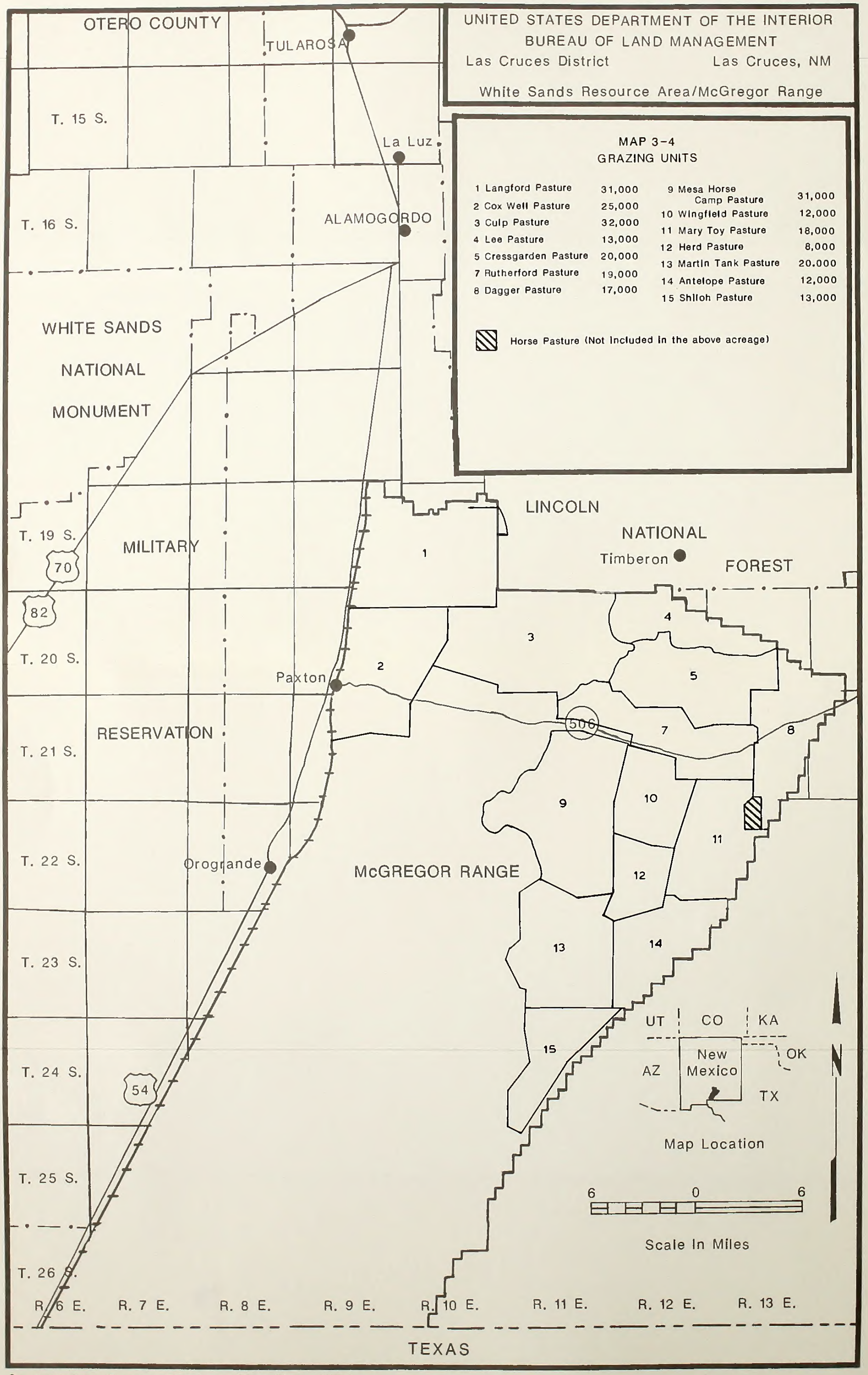
WILDLIFE

General Ecosystem Description

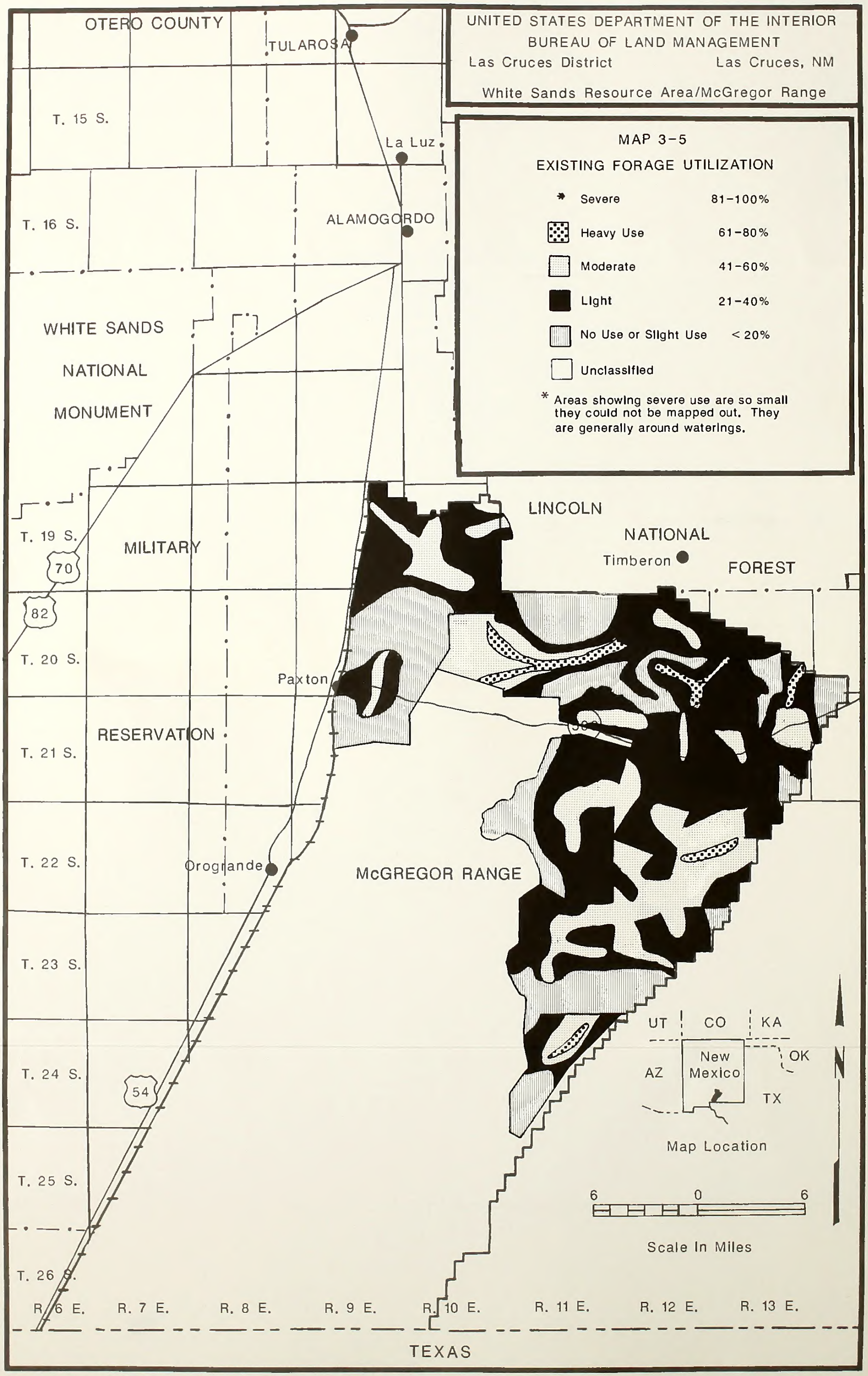
Fauna of McGregor Range are influenced by the great diversity of available habitats. Brown and Lowe (1977) classified the biotic communities of the area into four major groups: Great Basin Conifer Woodland, Plains and Great Basin Grassland, Semidesert Grassland, and Chihuahuan Desert Scrub. Within these major categories, a variety of habitats and microhabitats can be identified.

Methods

The BLM uses a system of habitat identification based on fauna, vegetation, soil, and topographic similarities to group areas into site writeup areas (SWAs) and finally standard habitat sites (SHSs). Each SHS has different habitat conditions and consequently different faunal characteristics. A species list is developed for



Source: Las Cruces District Office Files, 1988.



Source: Las Cruces District Office Files, 1988.

each SHS. This system requires extensive field examination. Such an inventory was completed for portions of public land within the White Sands Resource Area (WSRA) adjoining McGregor Range. An effort is made here to expand those data to McGregor Range. Habitat sites were delineated in the office using the soil mapping units in the Soil Conservation Service (SCS) Soil Survey (1981), range site descriptions, aerial photos where available, and the SHSs identified adjacent to McGregor. The resulting map is very general and in most cases includes several SHSs within any of the mapped habitat areas.

Habitats

Standard Habitat Site Descriptions

The following are the SHSs identified in the Draft White Sands Resource Management Plan (USDI 1986).

NM 001 Creosote Rolling Upland (LATR RUP)

The vegetation community of this SHS is dominated by creosotebush which usually exists with a variety of subdominant species including bush muhly, burrograss, tobosa, desert holly, broom snakeweed, tarbush, and littleleaf sumac. Upland areas are drained by numerous arroyos and consist primarily of eroded soils and gravelly inclusions.

NM003 Creosote Hill (LATR HILL)

The vegetation community of this SHS is similar to the Creosote RUP SHS in that it has an understory of similar grasses and forbs. However, grama grasses are more prevalent along with a greater variety of shrub species including mariola, spice bush, whitethorn acacia, and fourwing saltbush.

NM004 Mixed Shrub Mountain (MXSH MTN)

Shrub species dominate the vegetation community of this SHS with an understory of grama grasses, bush muhly, slim tridens, and threeawns. Characteristic shrubs are broom snakeweed, whitethorn acacia, catclaw mimosa, Apache plume, skunkbush sumac, Wrights buckwheat, and mountain mahoghany. This SHS is located between surrounding uplands and below the pinyon-juniper community.

NM005 Mixed Shrub Rolling Upland (MXSH RUP)

The vegetation composition is virtually the same as that for the Mixed Shrub Mountain SHS, but with less shrubs and more grasses.

NM006 Mixed Shrub Hill (MXSH HIL)

Dominant species of this SHS are desert type shrubs with local occurrence of succulents including yuccas, sacahuista, sotol, and cacti. Clumps of grama grasses are common. Typical shrubs are broom snakeweed, mesquite, creosotebush, feather dalea, spice bush, mariola, and tarbush.

NM009 Mesquite Rolling Upland (PRGL RUP)

Tobosa is the dominant grass in this SHS. Vine mesquite, black grama, and bush muhly occur in lesser amounts. Other shrub species associated with mesquite include creosotebush, little leaf sumac, soaptree yucca, skunkbush sumac, Mormon tea, broom snakeweed, and fourwing saltbush.

NM010 Mesquite Sand Dune (PRGL SDN)

The dominant plant species in this SHS is mesquite. Other commonly associated plants include fourwing saltbush, sand sagebrush, broom snakeweed, and a variety of annual and perennial forbs. Grasses are typically scarce with mesa dropseed being most common. Dunes vary in height from 2 to 10 feet depending on soil depth.

NM011 Grass Flat (GRAS FLT)

Grass flats are usually low swales and consist primarily of grass species, the dominant being tobosa. Other grasses include vine mesquite, gramas, muhlys, burrograss, dropseeds, and lovegrasses. Some areas are entirely alkali sacaton. Shrub species are found in low numbers with soaptree yucca being most common along with broom snakeweed, mesquite, and allthorn.

NM012 Grass Rolling Upland (GRAS RUP)

This SHS differs from the Grass Flat SHS because of lower density of grasses and its occurrence in nonswale or isolated pockets settings. Gramas

are common along with numerous other grasses. Tobosa is dominant.

NM013 Grass Mountain (GRAS MTN)

This SHS occurs on slopes of mountain ranges above the surrounding uplands. It typically supports a high percentage of gramas with inclusions of tobosa, Kentucky bluegrass, junegrass, and bluestems. Shrubby vegetation is widely scattered and is represented by datil yucca, Engelmann pricklypear, mountain mahogany, ocotillo, oaks, sacahuista, Apache plume, rabbitbrush, and fringed sage.

NM014 Pinyon-Juniper Grass Mountain (PJGR MTN)

The dominant species of this SHS are pinyon pine and one-seed juniper with sparse to medium dense grass cover of gramas, muhlys, and threeawns. The shrub understory consists of mountain mahogany, oaks, rabbitbrush, skunkbush sumac, pricklypear, and cholla. Several annual and perennial forb species are represented.

NM015 Arroyo Riparian (ARIP)

This SHS is defined as a drainage or arroyo with only a brief intermittent water flow supporting vegetation dissimilar to that of surrounding uplands. Grass and forb species are often sparse. Typical shrub and tree species include desert willow, hackberry, Apache plume, western soapberry, salt cedar, littleleaf sumac, mesquite, ashes, and brickelbush.

NM016 Riparian (RIP)

This SHS includes areas along perennial streams and sometimes around permanent water sources. Salt cedar is the dominant plant species. Occasional species include cottonwoods, willows, Arizona sycamore, box elder, little walnut, and ashes. Understory cover consists of algerita, ceanothus, ratany, and mesquite. Grasses are typically sparse.

NM021 Grass Hill (GRAS HIL)

Gramas and tobosa are the dominant grasses. Forbs are seasonally abundant. Succulents are represented by ocotillo and yuccas. Shrub overstory is limited to Apache plume, skunkbush sumac, and broom snakeweed.

NM022 Salt Flat (SALT FLT)

This SHS consists of a large area with a slight depression that collects runoff water and has saline or highly alkaline soils. Vegetation is characteristically dominated by alkali sacaton, dropseeds, inland saltgrass, and tobosa-galleta. Forbs are common and typical species include seepweed, sunflowers, and Russian thistle. Shrubs may include saline adapted species including pickleweed as well as fourwing saltbush.

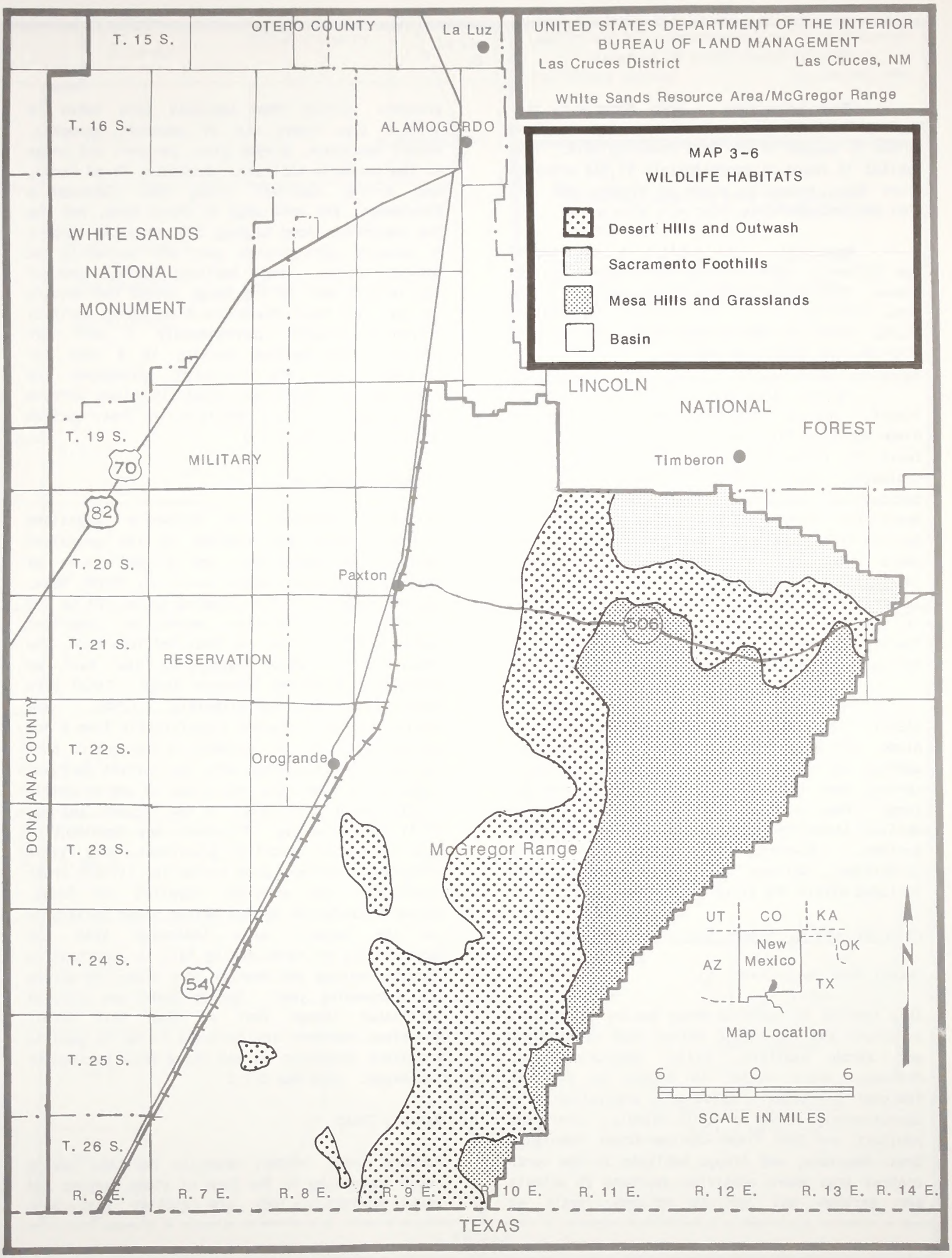
McGregor Range Habitat Sites

The species list for each habitat site, taken from the White Sands Integrated Habitat Inventory Classification System (IHICS) W4 Data Base on BLM's DPS-8 Computer, is contained in Appendix H. The following are aggregates of SHS's applied to mapping of McGregor Range habitats. (See Map 3-6.)

Basin - This habitat is composed of six SHSs: Creosote Rolling Upland, Mixed Shrub Rolling Upland, Mesquite Sand Dunes, Grass Rolling Upland, Grass Flat, and Mesquite Rolling Upland as mapped within the Alamo Planning Unit. The habitat encompasses approximately 292,264 acres of the relatively flat terrains of the Tularosa Basin.

Desert Hills and Outwash - SHSs comprising this habitat are: Creosote Hills, Mixed Shrub Hills, Creosote Rolling Upland, and Mixed Shrub Rolling Upland as mapped in both the Alamo and Mesa Planning Units. It is found on hills and their outwash pediments both in the Tularosa Basin and the pediments of the foothills of the Sacramento Mountains. Total area is approximately 140,043 acres.

Sacramento Foothills - This habitat is comprised of the following SHSs: Mixed Shrub Mountain, Mixed Shrub Hill, Grass Mountain, Pinyon-juniper Grass Mountain, Grass Hill, and Grass Rolling Upland as mapped in the Mesa Planning Unit. The habitat is found in the higher hills of northern McGregor Range and covers approximately 42,622 acres.



Source: Las Cruces District Office Files, 1988.

Mesa Grasslands - SHSs comprising this habitat include: Grass Flat and Grass Rolling Upland as mapped in the Mesa Planning Unit. This habitat is found on approximately 91,333 acres of Otero Mesa, primarily south of Highway 506. It does not include hills.

Mesa Hills - This habitat is comprised of the following SHSs: Grass Hill, Grass Rolling Upland, and Mixed Shrub Hill as mapped in the Mesa Planning Unit. It covers approximately 42,622 acres of low grassy hills intermingled with the Mesa Grassland Habitat.

Arroyo Riparian - This is a SHS in itself. Species lists are taken from both the Alamo and Mesa Planning Units. It consists of at least 357 linear miles of shrubby habitats along drainages that differ markedly from the surrounding uplands. These habitats were quantified from the U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Maps where they are classified as a riverine, intermittent streambed, temporarily or intermittently flooded. Acreage for this habitat is included within the first five habitats; however, assuming a width of 600 feet, this habitat would contain 28,560 acres.

Riparian - This is another SHS in itself. The species list is taken from both the Alamo and Mesa Planning Units. This habitat applies to areas of perennial water including springs and the numerous stock tanks on the range. They are delineated on the USFWS National Wetland Inventory Maps as palustrine ecological systems. However, they have not been quantified. Acreage for this habitat is also included within the first five habitats.

Priority Species -- Game Species and Predators

Desert Mule Deer

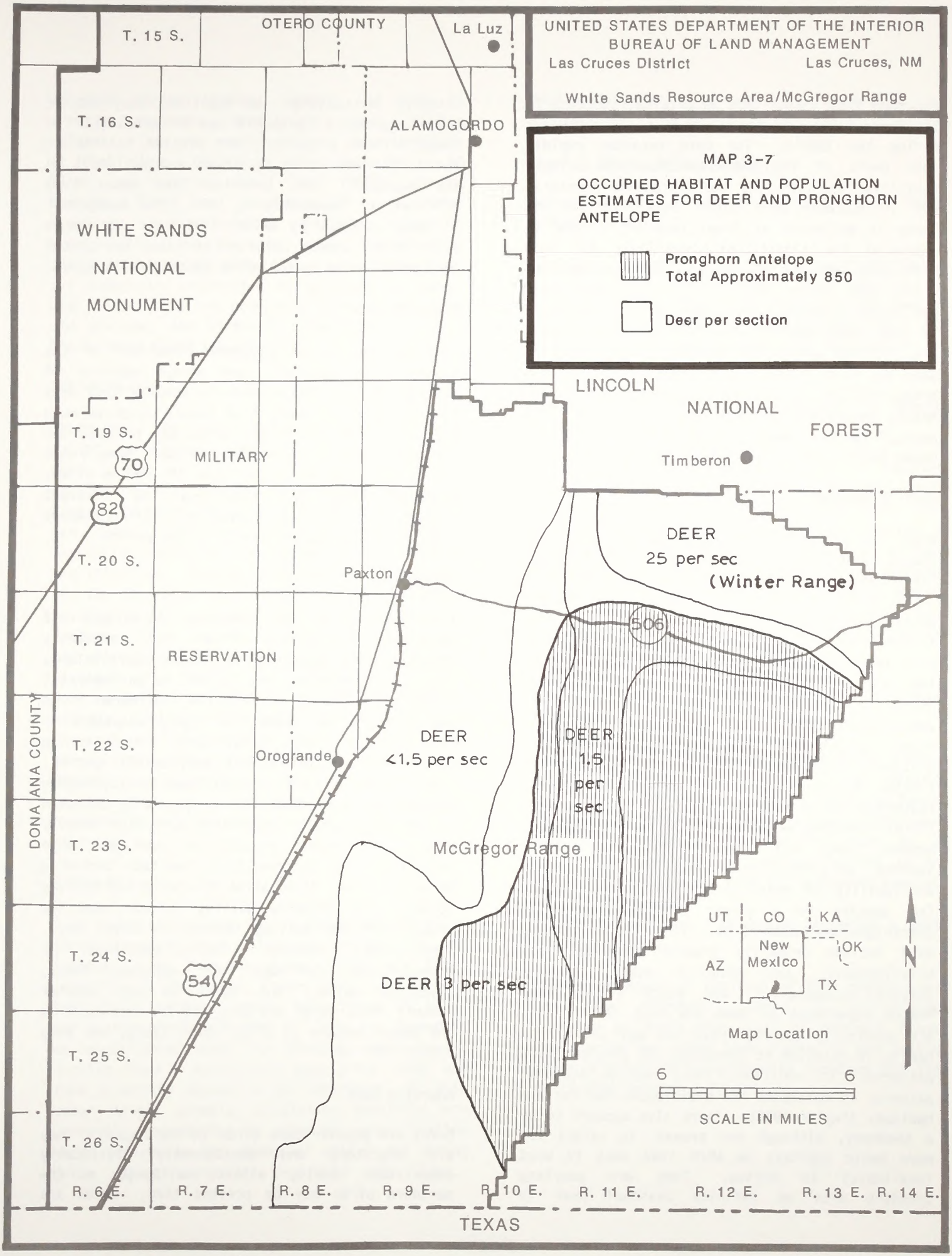
This species is found in areas having significant structure and vegetation relief such as woodland and shrub habitats, hills, mountains, and drainages where relief is broken by vertical features. Total existing population is approximately 4,000 to 4,500 animals. Preferred habitats are the Pinyon-Juniper-Grass Mountain, Grass Mountain, and Arroyo habitats in the north central area where densities approach 25 animals per section and are at optimum levels at present. Winter food habitats data taken in 1978-79 show heavy use of mountain mahogany, desert ceanothus, pinyon pine, juniper, and sedge in the mountain habitats. Creosote, Mixed Shrub, and Arroyo habitats along the Sacaramento Escarpment, the west edge of Otero Mesa, and the low foothills along highway 506 currently support 3 animals per section and are currently at optimum levels. These habitats contain some of the largest deer on the Range though the density is low. The Hueco Mountains Mixed Shrub habitats currently support approximately 1 deer per section. The optimum density is 4 deer per section. Deer are scattered throughout the remainder of the range primarily along arroyos and on small hills at densities of 1 per section or less. (See Map 3-7.)

Pronghorn Antelope

Pronghorn antelope are primarily grassland animals. They are limited to the grassland habitats on Otero Mesa and a small area of rolling grasslands below (west of) Otero Mesa. Current population is estimated to be 700 to 750 animals. The McGregor population comprises approximately half of the Mesa Antelope Herd, the remainder of which range to the east on grasslands adjoining McGregor Range. Total herd population is approximately 1,500. The population has increased significantly from a low of approximatley 177 animals in the entire herd in 1969. It is unknown what the current carrying capacity is since the population is approximately double the highest level in the records and may still be increasing. Pronghorn are dependent on good ecological condition grasslands, with little topographic relief, good visibility (little brush invasion), and abundant supplies of forbs. Research conducted by New Mexico State University in the Roswell area indicates that the availablilty of forbs during fall is important to fawning success and overall herd viability during the succeeding year. Spring forbs are also of importance though less so than fall forbs. Grassland habitats are believed to be in good to excellent condition on the Otero Mesa portion of the Range. (See Map 3-7.)

Barbary Sheep

Barbary sheep inhabit mountain habitats having rough topography in the form of steep canyons and rock outcrops. They are exotics that have



Source: Las Cruces District Office Files, 1988.

expanded their range from an original stocking in the Hondo Valley approximately 50 miles northeast during the 1950's. The herd expanded rapidly into parts of the Guadalupe Mountains, their foothills, and parts of the Sacramento Mountains and their foothills. Total population on the Range is estimated at fewer than 20. There is potential for significant competition for food with mule deer due to seasonal diet similarities (Bird and Upham 1979, Krysl et al. 1979) particularly during stress periods and especially in high sheep density situations. The management and strategy adopted by New Mexico Department of Game and Fish (NMDGF) is to remove species from areas outside designated management units (New Mexico Department of Game and Fish 1987). The nearest barbary sheep management area is in the Hondo Valley, 50 miles north of McGregor Range.

Oryx or Gemsbok

Oryx, an exotic African antelope of about 500 pounds in weight, are inhabitants of the Tularosa Basin habitats on the range below Otero Mesa. A total of 91 head were released by NMDGF on the White Sands Missile Range (WSMR) in the 1970's as a game species. The herd has faired extremely well and expanded its range over a large area of the Tularosa Basin and into the Jornada del Muerto to the west. Total population on WSMR is approximately 600. Total population on McGregor Range is probably less than 20 and may be seasonal. Habitats on that area of McGregor are similar to those found on the missile range, therefore, it is expected that they would do well there. Surface water is not a limiting factor, however they will use it when available. Seasonal occurrence on McGregor may be due to availability of water during the summer rains. The species is a grazer utilizing primarily coarse grasses (Wood et al. 1970). Food items on WSMR include primarily grasses (dropseeds and bristlegrass), and mesquite beans, Russian thistle, globemallow, and yucca leaves (New Mexico Department of Game and Fish 1977). They are apparently opportunistic and may shift food habits in relation to phenology and precipitation patterns. In addition, there may be seasonal patterns in movements and preferences for certain habitats (Taylor 1988). There also appears to be a tendency, although not proven, to select for more mesic habitats on WSMR than what is used (available) in Africa. They are yearlong breeders with no definite seasonal peak in breeding or calving. In addition, they can be quite aggressive, probably due to adaptation to large African predators, and present hazards to the public and other personnel and equipment in the habitat. This behavior also makes them difficult or impossible to herd. The management strategy adopted by NMDGF (1987) is to remove Oryx from areas outside of the designated management areas on the White Sands Missile Range.

Mountain Lion

This species is an uncommon inhabitant of the brushy hill, mountain, and arroyo habitats of McGregor Range. Occurrence is usually tied very closely to its primary food source which is mule deer. Arroyos and canyon areas may be used for movements within their home range. Home range may be as large or larger than 175 square miles. Mountain lions are occasional to frequent predators of livestock depending on circumstances and can inflict severe losses in the process.

Coyote

The coyote is an areawide inhabitant of importance primarily from its predatory activities on domestic livestock, particularly sheep. In addition, the coyote is an important furbearer, although not legally considered so in New Mexico. The animal is highly adaptable to all habitats and situations. It is an opportunistic feeder as are many desert species. Exact densities are unknown, and no population indices are available. It is generally believed to be most commonly associated with high density rabbit and rodent populations such as those existing in the Tularosa Basin habitats including Mesquite Dunes, Mixed Shrub Mountains and Rolling Uplands, and Creosote Rolling Uplands, and the Grass Flat and Rolling Uplands on Otero Mesa. They may, however, take advantage of opportunities for deer and antelope fawns, livestock calves, and lambs in any habitat (Bekoff 1982, Voigt and Berg 1987). Carrion from the above animals is often taken (Voigt and Berg 1987).

Mourning Dove

Doves are popular game birds in the region. They are migratory and consequently practically nonexistent during winter, although a few northern birds may be present then. Doves are

abundant during spring, summer, and fall in arroyo, riparian, and mixed shrub rolling uplands. They are common in most other habitats at that time. Densities range from 35 to 50 birds per section (USDI BLM 1980). During nesting, birds are dependent on free water supplies, and therefore closely tied to precipitation and man-made water improvements. Dirt tanks, particularly those with large trees are especially attractive to doves during summer and fall. Foods are generally large seeded forbs and grasses, and birds may congregate in areas where these foods are plentiful.

Scaled Quail

These quail are common to most areas of the Range except the mountain habitats. They are probably most common in shrubby Arroyo and Mixed Shrub Upland and Hill habitats. Densities may be as high as 93 birds per section in these areas (USDI BLM 1980). As with other desert animals, population densities are primarily dependent on precipitation. Studies indicate that production of the previous year significantly influences nesting success. Scaled quail are opportunistic feeders. Diets tend to reflect plant composition and phenology, and insect availability. They are significantly reliant on insects as a food source, particularly during nesting and juvenile periods. Good condition Mesquite and Mixed Shrub Savannah habitats with a good forb and grass composition with intermixed shrubby arroyos provide needed habitat components and should be considered in management activities. Availability of free water is not believed to be limiting.

Gambel's Quail

This species is primarily an inhabitant of Mixed Shrub Arroyo Riparian, Riparian, and Alluvial Fan habitats. On McGregor Range, they are found primarily in the Basin, Desert Hill, and Outwash habitats. Densities range from 32 to 75 birds per section (USDI BLM 1980). They are dependent on mixed shrub areas for feeding, resting, and nesting cover. Areas with good grass cover and forb diversity appear to be important. As with other desert animals, population densities are primarily dependent on adequate precipitation which influences the amount of winter and spring green plant material available for food. Availability of free water is generally not limiting except in drought situations.

Special Status Animal Species

Baird's Sparrow - *Ammodramus bairdii* - State Endangered Group 2

This is a migratory bird potentially occurring in the Mesa Grassland and Mesa Hills habitats on McGregor. This habitat is primarily for feeding as the species moves through on migration. The reason for listing is loss and degradation of grassland habitat.

Swainson's Hawk - *Buteo Swainsoni* - Federal Candidate Category 2

Swainson's hawk is an inhabitant of southern shrub habitats and is common in the basin habitats during spring, summer, and fall. The species is migratory in New Mexico, leaving in fall to move south, returning in spring to nest and rear young. Reason for candidacy is believed to be decline in numbers due to poor nesting success and habitat degradation. Consideration is given this and other raptor species through minimizing disturbance during nesting.

Mountain Plover - *Charadrius montanus* - Federal Candidate Category 2

This species is migratory and probably winters in the McGregor area. There is a recorded sighting on Otero Mesa east of McGregor Range. Primary habitat would be in the Mesa Grasslands and Hills. Reasons for decline seem to be degradation and loss of nesting habitat in the north and possibly the same for wintering habitat.

Common Ground Dove - *Columbina passerina* - State Endangered Group 1

This is a potential resident of flat grassy areas throughout McGregor. There is a recorded sighting on Otero Mesa east of McGregor Range. The species has never been common in New Mexico. It is a ground bird, primarily spending its time collecting seeds for food.

Aplomado Falcon - Falco femoralis - Federal Endangered

This is a species of open rangeland and tropical savannahs having some brush including yucca, mesquite, and acacia. The species is very rare in the State and has not been recorded on McGregor Range. The latest sighting of the species was near Carlsbad, New Mexico in the spring of 1988. Reasons for decline include deteriorated rangeland condition, brush encroachment, and egg shell thinning due to pesticides (Hector 1988). A request has been submitted to FWS to consider the Otero Mesa area, on and off of McGregor Range, for consideration as a reintroduction site under the recovery plan.

Bald Eagle - Haliaeetus leucocephalus - Federal Endangered, State Endangered Group 2

The bald eagle is primarily a winter migrant in the McGregor area. The species has been recorded occasionally in the canyons on the north end of the Range. Reasons for use of the area are unclear, however it appears that they are casual visitors to McGregor from the Lincoln National Forest where they winter.

Longbilled Curlew - Numenius americanus - Federal Candidate Category 2

This species is primarily a winter migrant that uses varied habitats, but seems to prefer open grass habitats. Reasons for decline are unknown, but suspected to be loss of nesting and wintering habitat. There are several recorded sightings on Otero Mesa east of McGregor Range.

White Faced Ibis - Plegadis chihi - Federal Candidate Category 2

This is a riparian species, likely to be found at stock tanks and playas. It wades in shallows and wet meadows in search of frogs and grasshoppers. Reasons for decline appear to be human disturbance and loss of habitat. There is a recorded sighting on a playa east of McGregor Range.

Elegant Trogon - Trogon elegans - State Endangered Group 1

This is primarily a bird of the Madrean habitats in southwest New Mexico. It is included here due to a confirmed sighting just east of McGregor Range during the wildlife inventory for the White Sands RMP. Further occurrence is unlikely, but possible.

Gray Vireo - Vireo vicinior - State Endangered Group 2

This is an inhabitant of the Pinyon-Juniper habitats. In New Mexico, it is apparently only a summer resident. On McGregor it would be limited to the pinyon-juniper areas of the Sacramento Foothills habitat. Reasons for decline are unclear. The only BLM IHICS record for this species was taken northeast of Tularosa.

Tularosa Black-Tailed Prairie Dog - Cynomys ludovicianus - delisted

The Tularosa Basin population of the black-tailed prairie dog was once believed to be a subspecies geographically isolated from its nearest neighbors to the north and northeast. The population may have some behavioral differences from the common species of the Great Plains (Conley 1988). Towns are possibly less dense and smaller. The species is limited to the Mesa Grasslands on McGregor and the adjoining lands to the east, although several towns occur near Carrizozo to the north. Plague outbreaks appear to keep populations down. Reasons for listing were related to taxonomic studies. If these animals are a true subspecies, then it is extremely limited in range and deserves listing as threatened or endangered. There is interest in the livestock industry to eliminate or severely restrict these animals due to reasons of forage competition and possibly disease transmission.

RECREATION

Recreation use by the public is restricted on McGregor Range. State Road 506 and some county maintained roads (see Map 3-1) are the major access through the Range and are the only roads open to the public without permission on certain days. On occasion, these roads are closed when the Army is testing weapons. Each year the NMDGF conducts pronghorn, deer, and small game hunts in coordination with the Army and BLM for approximately 460 hunters. The hunts have some unique features. The deer hunt is permitted by public drawing for north of State Road 506. The issuance of military permits and hunt management have been negotiated by the Range Commander through the New Mexico State Game Commission (See Table 3-3 and 3-4). The area north of State Road 506 is designated limited to existing roads and trails for off-road vehicle (ORV) use. Although off-road use is restricted from the Range, the activity is taking place. Most is in the north end of the area. No off-road (military) vehicle maneuvers currently occur on McGregor Range outside of Maneuver Area 8.

TABLE 3-3
HUNT DATA FOR MCGREGOR RANGE
DEER

	81	82	83	84	85	86	87
Number of Hunters	-	-	602	611	857	407	317
% Success	-	-	47	52	47	59	59
Harvest	-	-	287	318	407	239	188

Source: New Mexico Department of Game and Fish, 1987

TABLE 3-4
MANAGEMENT UNIT 29 AND MCGREGOR RANGE HUNT DATA
PRONGHORN

	81	82	83	84	85	86	87
Number of Hunters	103	75	85	92	121	200	194
% Success	26	38	44	34	57	53	59
Harvest	27	28	38	31	69	105	115

Source: New Mexico Department of Game and Fish, 1987

The Recreation Opportunity Spectrum (ROS) inventory was completed in 1984 for McGregor Range (see Map 3-8). Table 3-5 illustrates the acreage for each class. The methodology used in determining ROS class is found in Appendix D.

TABLE 3-5
RECREATION OPPORTUNITY SPECTRUM
ACREAGE CLASSIFICATION

Opportunity Classification	Acres
Roaded Natural	58,074
Semiprimitive Motorized	543,499
Semiprimitive Nonmotorized (SPNM)	6,812

Source: BLM Las Cruces District Office Files, 1984.

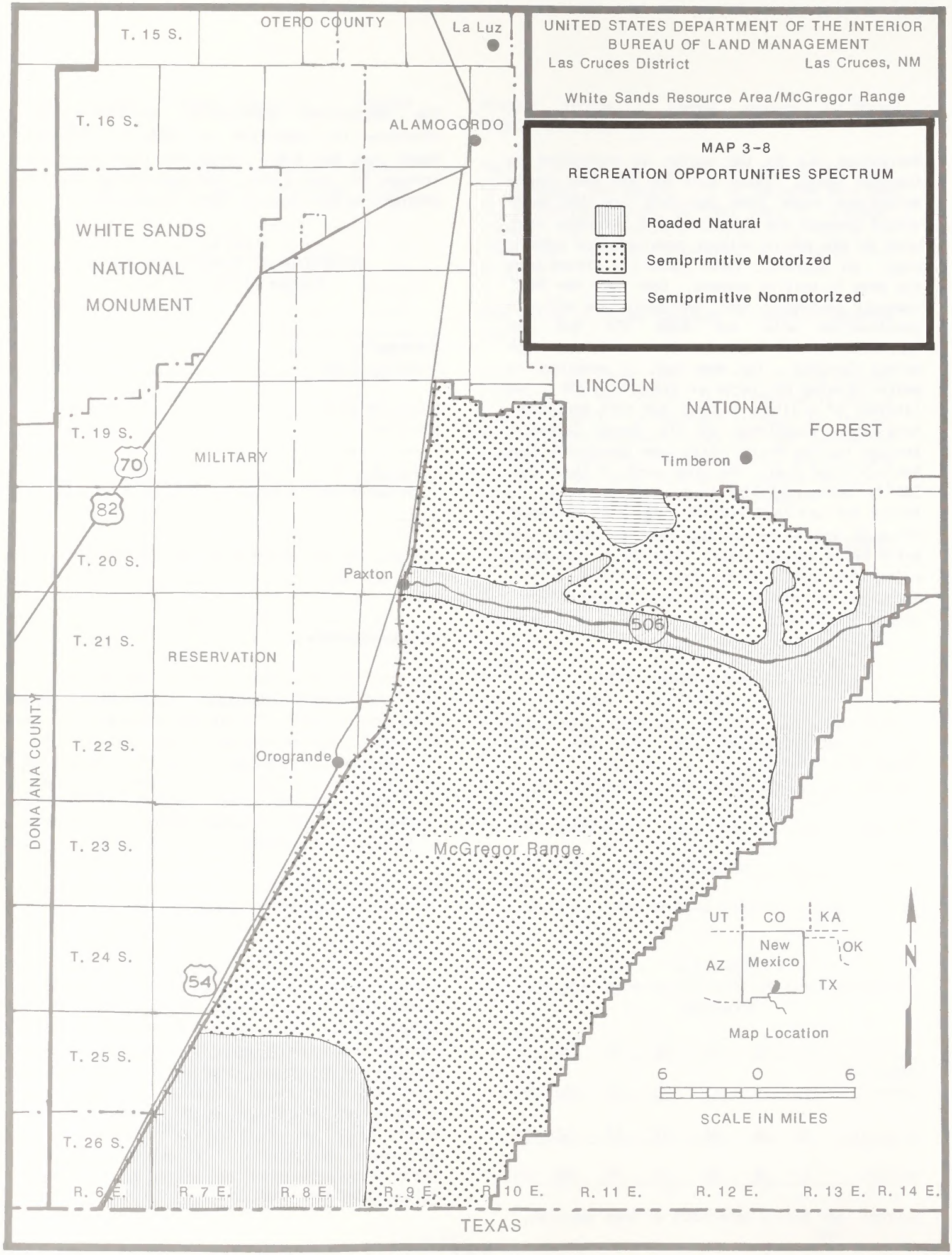
VISUAL RESOURCES

The inventory of visual resources and development of Visual Resources Management (VRM) classes were completed in 1977. Two of the four VRM classes are established on McGregor Range (See Map 3-9). The acreage in McGregor Range for those two classes are: Class III - 309,170 acres, Class IV - 299,215. See Appendix E for a description of the management objectives for each of the four VRM classes.

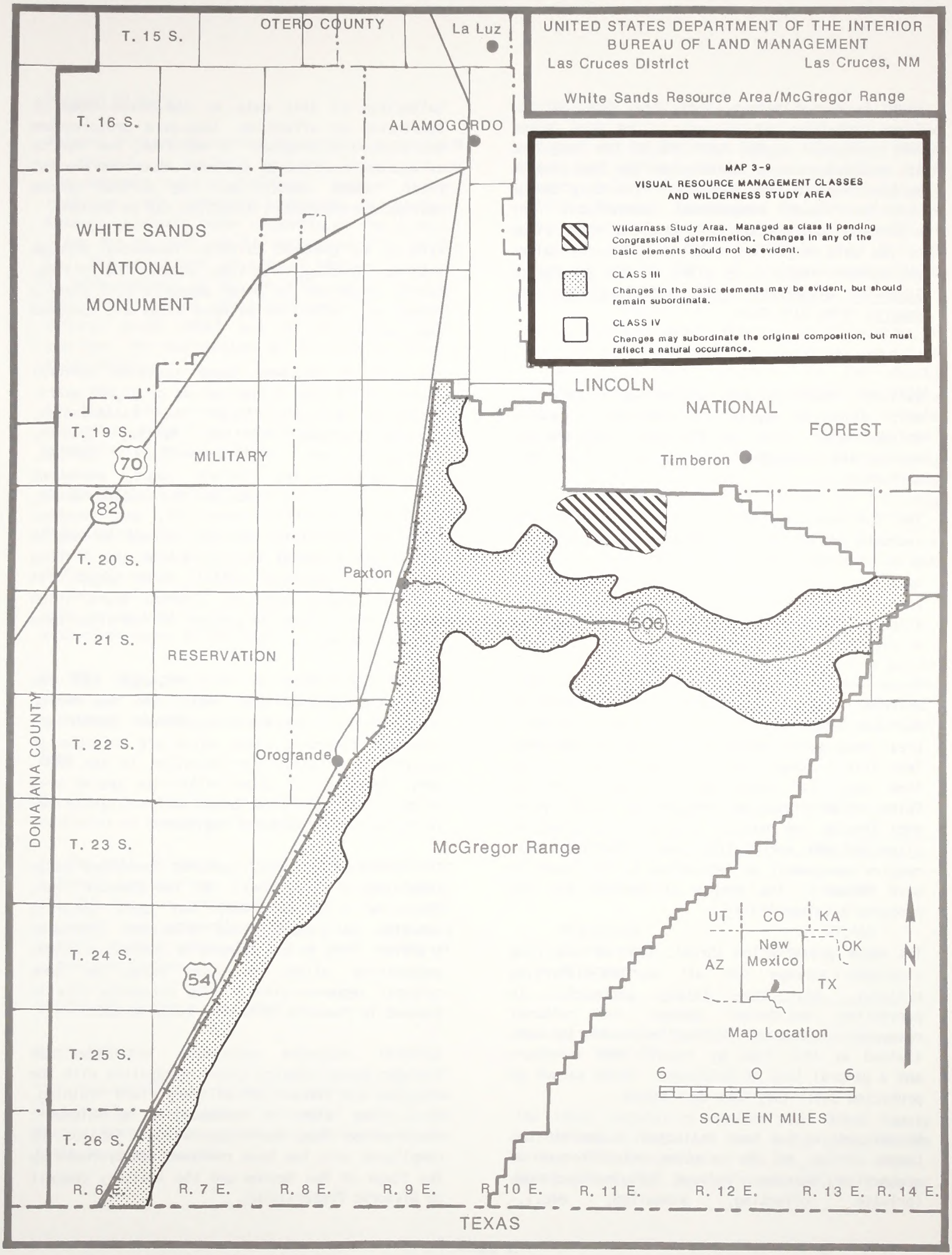
Class ratings are based on scenic quality, visual sensitivity, and distance zone criteria.

WILDERNESS

Wilderness resources on McGregor Range have been inventoried using the BLM Wilderness Inventory Handbook (USDI BLM 1978) and are currently being managed under the Interim Management Policy and Guidelines for Lands under Wilderness Review (USDI BLM 1979; revised 1983). This management emphasis will continue until Congress decides which lands are suitable or unsuitable for wilderness designation. Designated wilderness would be managed under the Wilderness Management Policy (USDI BLM 1981).



Source: Las Cruces District Office Files, 1988.



Source: Las Cruces District Office Files, 1988.

There is one Wilderness Study Area (WSA) on the Range containing 10,937 acres. The Culp Canyon WSA is located on the north end of the Range and is bordered on the north side by the Lincoln National Forest (see Map 3-9). The Culp Canyon WSA has been recommended nonsuitable for wilderness designation. A detailed description of the Culp Canyon WSA and its wilderness values and special features is given in the New Mexico Statewide Wilderness Study, Wilderness Analysis Reports (USDI BLM 1988).

CULTURAL RESOURCES

Cultural resources are non-renewable resources which cannot be repaired or replaced if damaged or destroyed. This quality makes adequate and appropriate management necessary from the beginning.

The BLM uses the term "cultural resources" to indicate all sites and isolated manifestations, both prehistoric and historical. Initially, BLM does not differentiate in treatment of cultural resource sites, all are considered potentially eligible for inclusion in the National Register of Historic Places (NRHP).

There are a significant number of recorded cultural resource sites within the boundaries of McGregor Range, with the potential existing for a great many more. These sites vary in size from less than 1 square meter to several acres. The time span for these sites ranges from the Paleo-Indian occupation (10,000 to 12,000 years ago) through the present century. The number of sites and the varied time span represented will require management as determined by the needs of each resource, the degree of threat, and the resource's vulnerability.

The major preservation thrust, that of requiring clearance surveys for all surface-disturbing projects, has been fairly successful in preventing accidental damage to cultural resources. Other preservation efforts are limited at this time by insufficient inventory and a general lack of knowledge. Sites cannot be protected until they have been found.

No information has been collected in the BLM Las Cruces Office on the relative effectiveness of protective measures against unauthorized use (private collecting, vandalism, etc.). Collection of this data is the first step in developing an effective, long-term preservation and protection program. In addition, the impacts of recreational use of cultural resources are not clear. These impacts must be defined before appropriate management direction can be decided.

Efforts to protect cultural resources through signing, fencing, limiting access, patrolling, public education, or other measures will clearly become more effective as more sites are recorded and assessed.

The area of McGregor Range contains cultural remains which span a time period of 12,000 years, including artifacts from the Paleo-Indian, Archaic, Jornada Mogollon, Apache, Spanish, Mexican, and Anglo-American periods. Archeological sites include camps, permanent habitations, procurement and processing areas, prehistoric quarries, rock art, and ranches. Areas of high site density include Sacramento Canyon (32 recorded sites), McAfee and El Paso Canyons (21 recorded sites), Culp Canyon (14 recorded sites), and the Tularosa Basin (high site density). Over 50 percent of the sites have ceramic remains.

During preparation of the McGregor EIS for grazing management (BLM 1983), the New Mexico State Historic Preservation Officer (SHPO) was consulted regarding sites which are eligible or potentially eligible for inclusion in the NRHP. SHPO identified 25 sites within the grazed area which are eligible or potentially eligible for inclusion in the National Register.

The condition of these cultural resources range from good to very poor. At the present time, Escondida Site (LA 458) has been severely impacted by unauthorized civilian vehicular traffic. This is one example of current problems encountered within McGregor Range on some cultural resource sites. (The Escondida Site is located in Township 19 South, Range 10 East.)

Cultural resources management activities on McGregor Range require close integration with the planning and conduct of military field training. Fort Bliss also is implementing an Historic Preservation Plan, the Installation's Section 106 compliance plan has been reviewed and approved by the State of New Mexico and the Advisory Council on Historic Preservation.

Natural History

Natural history resources are defined by the BLM as ecologic or geologic features significant to the Nation's natural heritage. Natural history resources are generally managed as National Natural Landmarks under authority of the Historic Sites Act of 1935 and in accordance with 36 CFR 62. BLM management of natural history resources is also subject to 43 CFR 8200, which provides for identification and establishment of Research Natural Areas (RNA) and 43 CFR 8352, which provides for designation of Outstanding Natural Areas (ONAs).

At this time there are no natural history resources identified as existing within the boundaries of McGregor Range.

Paleontological Resources

Paleontological resources consist of the fossil record of past plant and animal life, and are protected under FLPMA and managed through the issuance of scientific use permits. Petrified wood is managed under public free use which is authorized under 43 CFR 3622.

At this time, there are no known paleontological resources identified as existing within the boundaries of McGregor Range.

FIRE

The fire program for the BLM and the Army, is basically an emergency response activity.

In the past 15 years, the Army has responded to military caused fires on McGregor Range whereas the BLM has not responded to any fires. Fuels consumed are primarily grama grass, dropseed grasses, tobosa, mesquite, and a small amount of pinyon and juniper.

SOCIAL AND ECONOMIC CONDITIONS

Otero County

The planning area is located in Otero County, New Mexico which is in the south-central part of the State. Otero is the second largest County in the State in terms of land.

Although it is a small sector for Otero County, the farm sector is the most affected by the current use of McGregor Range. The farm sector made up 2 percent of total employment for Otero County in 1984 (Bureau of Economic Analysis 1987). Personal income from the farm sector was .5 percent of the County's total (Bureau of Economic Analysis 1987). This is about half of what it was in 1980, which corresponds with a nationwide trend of lower farm income.

Otero County is ranked 26th out of 32 counties in New Mexico for cash receipts on all farm commodities. Crops produced in the County include hay, alfalfa, cotton, pecans and chili. The largest commodity in the County is cattle which is 61 percent of total cash receipts. Otero also has sheep and hog commodities in the livestock category. Otero had a total of 16,500 head of cattle on farms and ranches in 1987 (New Mexico Agricultural Statistics Service 1986). Approximately 18 percent of cattle grazed in Otero County during 1987 were grazed in the planning area.

Demography

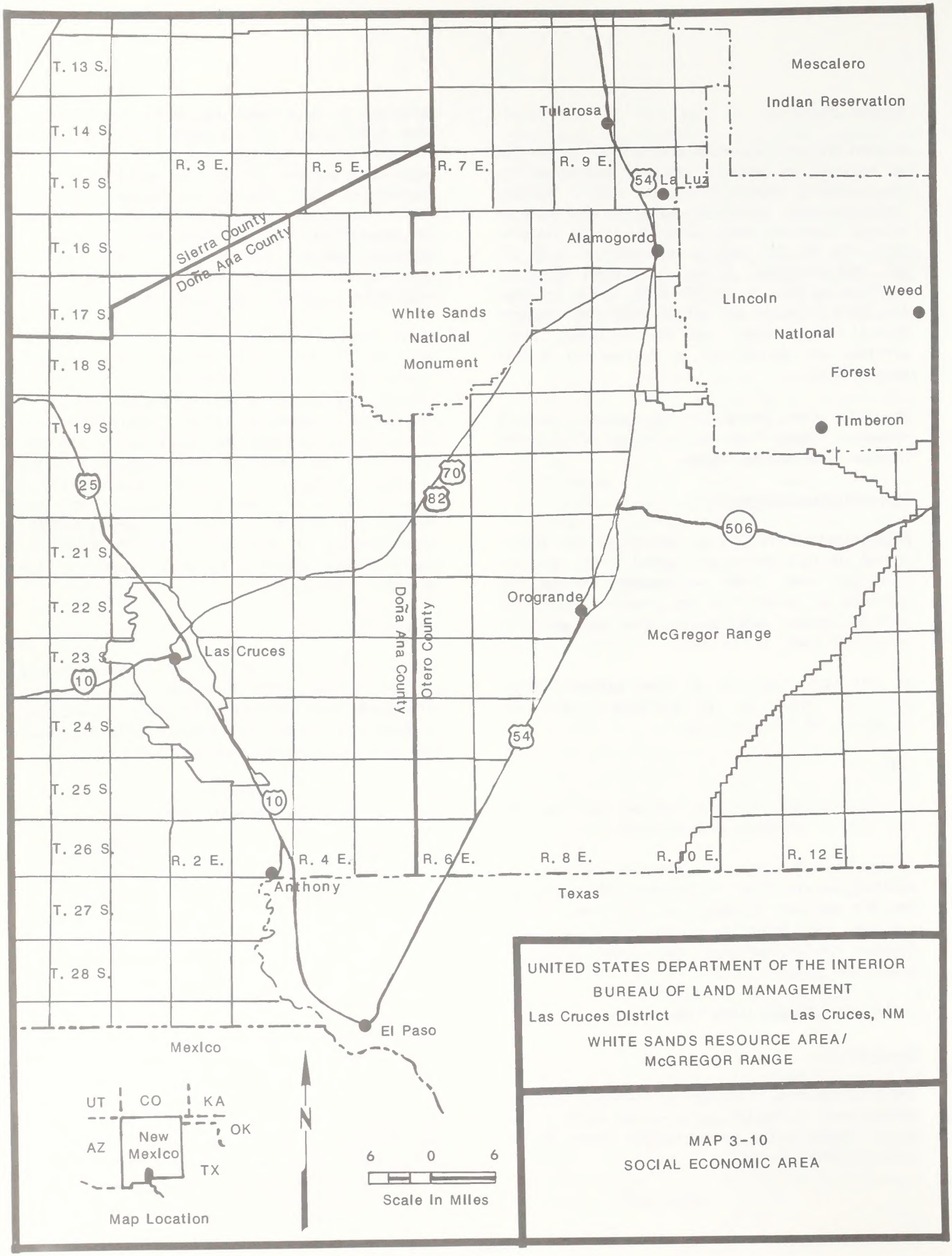
Otero County has a population of approximately 50,200 people. Over half of these live in Alamogordo with the rest in Tularosa, Cloudcroft, Timberon, or other rural areas. Table 3-6 shows the population distribution of Otero County.

TABLE 3-6
CITY POPULATION IN OTERO COUNTY

Location	Population
Otero County	50,200
Alamogordo	27,485
Cloudcroft	642
Tularosa	2,704

Source: Bureau of Business and Economic Research, 1987

The other population centers near Otero County and McGregor Range are Las Cruces, New Mexico with a 1987 population of 59,330, and El Paso , Texas with a 1985 population of 545,887 (Greater



Source: Las Cruces District Office Files, 1988.

Las Cruces Economic Development Council 1987; El Paso Chamber of Commerce 1986). Along with the cities in Otero County, these population centers are close enough to McGregor Range to contribute to permitted public uses. Greater detail on the Las Cruces and El Paso metropolitan areas is contained in the Management Situation Analysis (MSA) which is available for review in the White Sands Resource Area Office. Map 3-10 shows the major population areas in relation to McGregor Range.

McGregor Range

McGregor Range encompasses approximately 679,468 acres of land in Otero County; 608,385 acres of which are BLM withdrawn lands. Otero County does not currently receive Payments in Lieu of Taxes (PILT) for this withdrawn land because it is considered an active military reservation. Because BLM still has management rights to the land, the issue of whether or not PILT payments are required is being reviewed by the U.S. Department of the Interior and a final ruling is forthcoming.

The units that are grazed by livestock are contracted by competitive bidding at a public auction. Livestock grazing on McGregor Range is entirely funded by the income from these contracts; no money is attained from the Range Betterment Fund for repairs, improvements, salaries, etc. In 1987 bidding prices were set to start at $4.00 per AUM. Contracts range from 1 to 5 years with actual grazing periods in 9-month and 18-month intervals. Table 3-7 shows current contracts. For FY 88, a total income of $153,153 will be attained by the BLM for these contracts.

Social Setting

Two small towns closely border McGregor Range, Orogrande and Timberon. Both towns are unincorporated and are located in Otero County. Orogrande is located approximately 40 miles south of Alamogordo on State Highway 54, which runs parallel to the McGregor Range border. The population of Orogrande is estimated to be between 75 and 80 people. Most of the residents are either self-employed, work in Alamogordo, or at White Sands Missile Range. Students from Orogrande attend school in Alamogordo. The town has its own voluntary fire department and is serviced by the State Patrol for police protection (Orogrande Chevron 1987). Because of Orogrande's location to McGregor Range, it is likely that the town would be affected by the use

TABLE 3-7
BID PRICES FOR MCGREGOR RANGE LEASES

Name of Lessee	Unit Number	AUMs	Price Per AUM	Total Income (Yearly)
5-Year Contract				
Leonard Akers	2	9,000	$6.00	$10,800
Rocky Kirk	3	13,500	$4.10	$11,070
Harry Thompson	5	15,750	$7.00	$18,130
Oren Bewley	9	33,750	$4.00	$27,000
Harry Thompson	13	21,375	$4.00	$17,100
3-Year Contract				
Harry Thompson	4	7,425	$4.00	$9,900
9-Month Contract				
Weldon Austin	1	1,800	$4.00	$7,200
Floyd Rowland	7	3,150	$4.00	$12,600
Jessie Munson	8	3,350	$4.00	$9,000
Thomas Morris	10	2,700	$4.00	$10,800
Thomas Morris	11	3,150	$4.00	$12,600
Doyle Conner	12	1,350	$5.15	$6,953
Yearly Total				$153,153

Source: BLM Las Cruces District Office Files, 1987

of the Range and that its residents would use the Range for hunting and other permitted public uses.

Timberon is located in the Lincoln National Forest just a few miles north of McGregor Range's northern border. The population of Timberon varies widely depending on the season. There are approximately 300 year round residents, and this number doubles during the summer months. Fifty percent of the permanent residents are estimated to be self-employed in Timberon while the rest are either retired, work in Cloudcroft, or in Alamogordo. The Timberon Protective Association (TPA) supplies its own security for the town. The town also has a voluntary fire department. Kindergarten through sixth grades attend the Timberon School, and seventh through 12 attend school in Weed (Burleson 1987). Because of its location to McGregor Range and the towns fluctuating population it is likely that residents would use the Range for hunting and other permitted public use.

Attitudes and Values

Much of the information in the attitudes and values section here was obtained through the BLM scoping process conducted in August, 1987.

Many people around McGregor Range are affected by its use. The town of Timberon is effected mainly because one of the main roads to the town, State Road 506, runs directly through the Range. This road is closed to the public during missile firings which limits Timberon residents access. Much public comment has been expressed about having continuous access on this road. State Road 506 is a dirt road and there is interest from the public to make it an all-weather (paved) road. Many comments about recreation on the Range were made. One of the main concerns was opposition to off-road travel on the Range or limiting ORV use to designated areas. Other forms of recreation were also supported. Continued hunting or more hunting is desired by some people, also more public access to the Range and Culp Canyon for recreation was expressed.

Much public comment was expressed about the resources on the Range. There is approximately equal support and opposition for mineral development. A little more than half of the public comments supported mineral development or access and patents for mineral development. The rest of the mineral comments were opposed to mineral development or some types of mining.

Public comment about grazing on the Range is mixed but most of the concerns or interests are in favor of continued livestock grazing. Although concerns were made about the current management of grazing on the Range, some people feel that the restrictions on the ranchers are too stringent such as not allowing sheep and goats to be grazed, vaccination requirements, and access limitations. Other comments about grazing were made. Some people are opposed to any grazing while others are concerned with overgrazing. Another comment questioned how much grazing affects the other resources.

Most of the public comment on wildlife was in favor of identification and protection of all wildlife on the Range and improving wildlife habitat. Predator control was mentioned with half opposing any control measures and half favoring control.

All but one comment about vegetation urged protection, identification, or limitations on collecting endangered species and vegetation products. One comment mentioned that management of vegetation products should not unduly restrict oil and gas activity.

Concerns about the protection of cultural resources were expressed. One comment mentioned that the cultural resources should be surveyed and another recommended that only significant cultural resources be allowed to affect oil and gas activity.

Much concern was expressed about the Culp Canyon WSA which borders McGregor Range. Most of the concerns were to protect natural and wilderness values of the area. Other comments mentioned opening the Canyon to public use.

Concerns over the use of the water resources, especially guaranteeing water rights/supply to Timberon and the protection of water resources were mentioned.

A number of comments inquired about a clarification of the roles between BLM and the Army. A few people recommended that the Army should exchange BLM land within McGregor Range for land in the Organ Mountains or Culp Canyon.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter provides the scientific and analytic basis for the selection of the preferred alternative. The significant impacts that are anticipated to result from the implementation of each of the alternative plans are discussed. Both the beneficial and adverse impacts affecting the environmental components described in Chapter 3 have been analyzed. If impacts are not discussed, the analysis determined that impacts would not occur or would be insignificant. None of the alternatives would have significant impacts on topography, climate, wilderness, paleontology, natural history, or fire. A summary of the impacts by alternative is presented in Table S-2.

The cause of an impact is tied to a component of the alternatives as identified in Chapter 2. The effect of the impact is tied to a component of the environment described in Chapter 3. The impacts discussed in this chapter were assessed on the basis of the description of the alternatives presented in Chapter 2. This assessment took into account the mitigation measures and standard stipulations described in Chapter 2, Continuing Management Guidance. Because of those design features included to minimize environmental impacts, the impacts assessed in this chapter are considered to be unavoidable. If irreversible and irretrievable impacts are not discussed in a given section, there are none.

Knowledge of the area and professional judgment, based on observation and analysis of similar conditions and responses in similar areas, have been used to infer environmental impacts where data are limited. The "long-term" for purposes of the analysis in this document is 20 years and the "short-term" is 5 years. Site-specific Environmental Assessments (EAs) would be completed for specific projects and proposals prior to implementation.

CONTINUING MANAGEMENT GUIDANCE

This section analyzes the cumulative impacts resulting from Continuing Management Guidance which are common to all alternatives and would likely occur no matter which alternative is ultimately selected. The estimated surface disturbing actions per year over a 20-year period under Continuing Management Guidance are summarized in Table 2-1.

Lands

The acquisition of the 920 acres State land within the McGregor Range would create a positive impact for the Army, for BLM, and for the State. The Army and BLM would have more manageable ownership patterns. The State could receive revenues from the sale or exchange of the land.

Potential impacts associated with the authorization of surface disturbing activities outlined in Table 2-1 would not create a significant impact to the lands program.

Since the exact location and extent of the disturbance of these continued management actions are not known further impact analysis is not feasible at this time, site-specific EAs will be prepared on a case-by-case basis.

Access

The closure of public access causes no significant impact.

Minerals

Decisions associated with continued management actions have no significant impacts on the minerals programs.

Acquiring 920 acres of State-owned surface and mineral estate would benefit the management of minerals. The Bureau currently has no jurisdiction in the management of those State-owned minerals and cannot control their disposition. If the State elected to dispose of the minerals, it would affect BLM's management of adjacent occurring minerals.

Air, Soil, and Water Resources

Available data indicate that no significant impacts to the quality of air have occurred due

to continuing management actions. The quality of air should remain good. Army restrictions prevent the influx of normal sources of air pollutants. Any impacts that might occur are minimal, localized, and of short duration.

Under Continuing Management Guidance, an estimated 10 acres per year would be disturbed over a 20-year period from all surface disturbing activities (see Table 2-1). In areas where there are highly erosive soils, there is the potential for short-term intensive erosional losses through wind and water until mitigation measures are applied. These areas would be reclaimed and stabilized. The overall cumulative impacts to soil and water resources would be minimal. Many of the continuing Rangeland Improvement Projects are designed and implemented to benefit either vegetation cover or animal use, or to resolve existing soil/water resource problems. These projects form the majority of surface disturbing activities and have favorable short- and long-term impacts to soil and water resources. Long-term impacts in these disturbed areas would result in vegetation reclamation which would result in the minimal loss of soil due to wind and water. Acquisition of State land (920 acres) would allow BLM to manage the soil and water resources in these areas.

The overall cumulative impacts to air, soil, and water resources would be minimal. Approximately 10 acres per year would be disturbed by continuing management actions. In areas where there are erosive soils and critical watersheds there is potential for short-term intensive erosional losses through wind and water until mitigation measures are applied. Many of the continuing projects are designed and implemented to benefit either vegetation cover or animal use, or to resolve existing soil/water resource problems.

Vegetation

Under Continuing Management Guidance, an estimated total of 10 acres per year would be disturbed during the next 20 years. These disturbed areas would be the direct result of those actions identified in Table 2-1 which occur throughout the livestock grazing area.

The vegetation resource would continue to be impacted through the short- and long-term from continuing management actions. These impacts would consist of destruction or alteration of various vegetation management areas. These impacts which would be short-term to the vegetation resource would be the direct result of: (1) construction of rangeland improvements, (2) various leases, permits, and rights-of-way, and (3) wildfire control. Vegetation loss would be short-term. Long-term effects would be the reclamation of these disturbed areas by natural or mechanical means. Another long-term effect would be better distribution of livestock and wildlife which would result in less removal of vegetation in concentrated areas.

Table 2-1 identifies the amount of surface disturbance caused by each rangeland improvement constructed.

These same planned actions would also alter the existing situation with respect to resources and management. Vegetation would be lost from the construction of rangeland improvements for the life of the projects. Acquisition of State land (920 acres) would allow BLM to manage the vegetation products in these areas.

In summary, there would be no significant impacts to vegetation under continuing management actions.

Livestock Grazing

Livestock grazing would continue in the livestock grazing area. Rangeland improvements would also continue to be constructed. The implementation of rangeland improvements would improve livestock distribution which would also benefit soil, water, and vegetation resources. With the increase of watering and fencing facilities, livestock weight gains should improve. Livestock condition should also improve due to better distribution. The implementation of the proposed rangeland improvements would result in an increase of total animal unit months (AUMs) from approximately 49,000 to 60,000 AUMs. Livestock grazing management would continue to operate under the current grazing program procedures. There would be no significant impacts on the livestock grazing program.

Acquisition of State land (920 acres) in the livestock grazing area would not have any significant impact on the livestock grazing program.

In summary, livestock grazing would improve as a result of the continuing management guidance. The implementation of rangeland improvements would improve livestock distribution, increase total AUMs, improve livestock weight gains, and improve livestock condition.

Wildlife

Acquisition of State land would increase the manageability of 920 acres of wildlife habitat over the long-term. No wildlife management activities are currently identified for those areas.

Issuance of one linear ROW per year, 4 miles in length by 100 feet in width, could result in actual surface disturbance of 1 acre. In addition, there would be potential for yearlong animal disturbance to 0.5 miles from the actual ROW depending on visibility due to presence of man and vehicles (including poaching) where new access roads are made. This disturbance calculated on distances of 0.1 and 0.5 miles visibility would affect 485 to 2,560 acres, respectively. Significance of the effects would depend on specific habitats, with the Sacramento Foothills and the Mesa Grassland and Hills habitats being most sensitive. The Sacramento Foothills habitats comprise 7 percent of the surface area of McGregor Range, but contains 3 percent of the deer population and is potential habitat for two special status animal species (bald eagle and gray vireo). The Mesa Grasslands and Hills habitats comprise 22 percent of the surface area of McGregor Range, but contains 88 percent of the pronghorn antelope population and is potential habitat for six special status animal species (Baird's sparrow, mountain plover, common ground dove, aplomado falcon, longbill curlew, Tularosa black-tailed prairie dog). Each ROW occurring in the habitats described above would modify by animal disturbance approximately 2 percent of the Mesa Grassland and Hills habitats and 6 percent of the Sacramento Foothills habitat. Actual disturbance would modify less than 1 percent of the Mesa Grassland and Hills and Sacramento Foothills habitats. There would be potential for "may affect" situations with special status species which would require Section 7 consultation. These effects would be cumulative over time.

Closure of the area to the public except on a controlled basis would have little effect on wildlife or wildlife habitat. There may be a slight benefit to populations and habitat quality due to reduced disturbance resulting from people observing closures.

Continuation of the current livestock grazing operation would affect deer and pronghorn antelope populations by increasing available forage to support 5,000 deer, an increase of 36 percent, and maintaining the existing 700 pronghorn antelope. In general, most game species benefit from moderate grazing levels which stimulate forb and browse growth. However, 97 acres of habitat would be eliminated over the long-term and 4,425 acres of habitat would decrease in ecological condition (USDI BLM 1980). This may be detrimental to species, such as the special status grassland species, requiring high ecological condition. Decrease in ecological condition due to shrub increase would be detrimental to pronghorn antelope, however, it would be beneficial to mule deer.

The effects of annual livestock water projects would include benefits to most bird and mammalian wildlife species due to increased availability of water. There would be a small long-term increase of deer, within 1 mile, and pronghorn antelope, within 3 miles, of new waters where the habitat is suitable. However, there are few, if any areas more than 3 miles from water in pronghorn antelope areas and 1 mile from water in deer areas, within the grazing units. Quail would not benefit significantly from additional water, although they might benefit from the presence of man made structures that provide structural diversity in the habitat.

In addition, ecological condition would decrease one condition class on 25 to 50 acres, depending on topography, around each new water (USDI BLM 1980). This effect would be particularly important to special status species (Baird's sparrow, McCown's longspur, mountain plover, common ground dove, aplomado falcon, longbilled curlew, Tularosa black-tailed prairie dog) that require as high an ecological condition as possible. Subsequent increased utilization in previously lightly and slightly grazed areas would, with rotational grazing, reduce seed

supplies for granivorous species including Baird's sparrow, McCown's longspur, and common ground dove 3 out of every 5 years. Increased utilization would affect up to 1,131 acres within a 0.75 mile radius around each new water.

For fence projects, there would be a modification of 0.4 acres of habitat due to surface disturbance. Also, there would be a long-term unquantifiable amount of decrease in habitat quality for grassland species resulting from concentration of cattle in small areas and subsequent increase of utilization in slightly utilized areas of the pasture. Increases in fence miles (density) per section would decrease habitat quality for pronghorn antelope due to the presence of restrictive habitat features, even with proper fencing standards allowing for free movement. This is a cumulative impact. There are no available data on critical threshholds for this problem.

The establishment of 2 miles of unimproved roads annually would result in approximately 1.5 acres of habitat lost due to surface disturbance and from 144 to 1,920 acres of habitat decreased in quality for big game by increased human disturbance factors including poaching, vehicles, and human presence. Human disturbance is also a cumulative impact.

The modification of 5 miles of fence annually would cause habitat loss of 1 acre due to surface disturbance. However, there would be an increase of habitat quality for big game in a radius of 1.5 miles (approximately 9,599 acres) due to improved movement ability.

Construction of one exclosure annually would decrease habitat quality for most species on approximately 0.1 acres. However, nesting habitat for birds would be improved on 5 acres over the long-term.

Planting trees within the above exclosure would disturb approximately 1 acre of habitat; however, habitat quality and hence populations of mourning doves would be improved a small amount.

Management of the Culp Canyon Wilderness Study Area (WSA) under Interim Management Policy (IMP) guidelines would decrease habitat manageability within the WSA due to increased workload to establish projects. In normal circumstances, WSAs are avoided where possible when considering habitat management work. However, management of the WSA under IMP guidelines would limit surface disturbing activities and would therefore be beneficial to all wildlife species due to maintained habitat quality.

Construction of two exclosures annually for cultural resource protection would disturb approximately 0.4 acres of surface, thereby decreasing habitat quality for most wildlife species in that area. However, the effect of the exclosure would be to allow vegetation to grow ungrazed, thereby increasing structural diversity within the immediate vicinity for various wildlife species. Excavation of 1 acre for archeological investigations would eliminate short-term use of all wildlife species. In the long-term, habitat structure would be shifted to benefit species requiring open shrubby or weedy areas.

Management to suppress all fires on McGregor, typically less than 1 per year on the average, would serve to eliminate any beneficial results of the fire for habitat management such as brush control. However, it would serve to protect those habitats, such as climax black grama, which are believed to be fire sensitive.

In summary, a large increase would be expected in big game populations with little change in small game populations and non-game populations expected. The big game increase would be due to the 3,971 AUM increase in forage for mule deer and pronghorn antelope. The small changes in small game and non-game would be due to the cancelling effect of the small benefits and detriments resulting from the combination of resource actions. However, numbers of special status animal species may decrease overall due to a continued trend toward decrease in ecological rangeland condition particularly in the Mesa Grassland and Mesa Hill habitats.

Recreation

As shown on Table 2-1, an estimated 10 acres per year over a 20-year period would be impacted by various surface disturbing activities. Site-specific EAs would be completed before starting construction of any project. As surface disturbing actions occur, recreation would not be significantly degraded.

Access is closed to the public except during prescribed periods. Access is authorized on a controlled basis.

Overall, recreational opportunities are severely curtailed because they would interfere with the conduct of military mission and pose too much of an unacceptable danger to public safety.

Visual Resources

An estimated 10 acres per year over a 20-year period would be impacted by various surfacing disturbing activities (see Table 2-1). As surface disturbing actions occur, visual resources would be impacted in the short-term; however, in the long-term all actions would be mitigated to meet visual class objectives when possible. Acquisition of State land (920 acres) would give BLM the authority to manage the visual resources on those lands.

The soil exposure and vegetation disturbance associated with construction sites would create 10 acres per year of land contrasting with the natural setting of the surrounding landscape. The facilities themselves would also be a source of contrast. The most noticeable effects would be associated with linear ROWs. The projected contrasts from these actions would be expected to be minor. After implementation of the actions on Table 2-1, it is unlikely that acreage would change in either VRM Class III or VRM Class IV. Stipulations will be implemented as appropriate to ensure that projects are compatible with management objectives.

Cultural Resources

Actions and activities of other BLM programs which are common to all alternatives will be conducted in accordance with all laws, regulations, and guidelines to result in no affect or no adverse affect upon cultural resources.

The acquisition of State land (920 acres) would have a positive impact upon cultural resources within those acquired lands and allow active management of those lands. This would result in the protection and mitigation of located cultural resources.

Federal regulations require cultural resource inventory and mitigation of impacts prior to issuance of ROWs. Therefore, the issuance of linear ROWs would not impact cultural resources.

Access control can directly protect cultural resources and have a positive effect, if access is effectively controlled.

The effects of livestock grazing on cultural resources would be low-level except where conditions combine to concentrate cattle. For example, proximity to water, certain types of forage, or natural barriers could result in impacts to cultural resources.

Construction projects would not impact cultural resources, as Federal regulations require cultural resource inventory and mitigation prior to ground disturbing activities. In the case of unimproved road construction, there would be the negative aspect of increased access to areas containing unrecorded sites with resulting potential for damage/destruction.

Wildlife forage use within the existing livestock grazing areas would result in continued impacts by the concentration of wildlife. This would add to the negative effect present from livestock grazing.

All wildlife related construction would require cultural clearances and would result in the location and mitigation of cultural resources.

Visual resource management would have a positive effect by controlling visibility of projects. This would reduce impacts to any cultural resources near visually managed projects by not focusing public attention on those projects.

WSA interim management in Culp Canyon would restrict access resulting in reduced damage to cultural resources. Transversely, fewer sites would be identified as a result of clearance related inventories.

Fire management, which includes prescribed burns, would result in a positive effect upon cultural resources by their location and protection through recordation/mitigation measures. It could also serve to directly protect cultural

resources, especially historical homesteads and other wooden structures through fire suppression.

In summary, impacts on cultural resources would not increase as a result of continuing BLM management activities. Sufficient safeguards exist to ensure no adverse effects upon the resources as a result of BLM undertakings.

Social and Economic Conditions

The sale or exchange of 920 acres of State land on McGregor Range could economically benefit the State. The State is not currently receiving revenues from the 920 acres, but the sale of the land would create revenue. If the land is exchanged, the State could produce revenues from the resources on the land it acquires.

Closed public access to McGregor Range has an impact on area residents, ranchers and recreationists. People who frequently use State Road 506 and other roads through the Range are often inconvenienced by road closures and limited access.

Grazing units would continue to be contracted under an open bid system, with the base bid determined each year by the minimum cost to maintain the Range. For FY 88, the base bid was $4.00 and the average bid was $4.52. All income from the leases goes back into the Range for labor, upkeep, and improvements.

There are no direct impacts to social and economic conditions from the land disturbing actions listed in Table 2-1. Indirect impacts may occur if the construction of proposed improvements such as pipelines, reservoirs, and wells increase the number of AUMs on the Range. If AUMs are increased and the market is favorable to increased beef production, there would be enhanced rancher income from the Range due to increased grazing, and more BLM income from grazing leases for labor, upkeep, and improvements on the Range. Regional employment and income may also be positively impacted if construction of improvements is contracted out to local businesses.

IMPACTS OF THE ALTERNATIVES

Alternative A - No Action

Lands

No specific direction on who issues land use authorizations on McGregor would cause confusion as to delegation of authority.

If BLM does not authorize the land uses, there would be no record of non-military use shown on the BLM Master Title Plats (MTPs).

For maintenance of roads, salable materials would have to be hauled in from off of the Range.

Access

The actions associated with the No Action Alternative would not have any significant impacts on access. (See the Continuing Management Guidance section of this Chapter for a discussion of impacts that apply to all alternatives.)

Minerals

Proposals associated with the No Action Alternative would have no significant impact on any of the minerals programs because all mineral activities on the Range would be closed.

Air, Soil, and Water Resources

The proposals associated with the No Action Alternative would have no significant impact to air quality.

There are several watershed areas on the Range that have a continuing high rate of soil erosion and sedimentation. Without a watershed management plan and monitoring studies, there would be no method of tracking any changes in soil erosion and sedimentation. No mechanisms would be identified for implementation in areas showing high soil and water erosion.

Limiting ORV use to existing roads and trails north of State Road 506 (116,000 acres) would continue to mimimize the amount of surface disturbance in that area.

In summary, soil and water erosion would continue in areas containing critical soils. Without watershed management plans and monitoring studies, there would be no way of tracking any changes in soil erosion and sedimentation.

Vegetation

Without a watershed management plan and some type of monitoring studies, there would not be a way of determining the amount of vegetation loss in relation to soil erosion due to water and air movement.

Accumulation of growth over the years makes some plant species unpalatable with the current year's growth. Utilization on these species would continue to be at a low level. Without any prescribed burning and monitoring studies, BLM would not have a way to document any significant impacts a fire has on various plant species.

Management of four vegetation study sites (3,910 acres) would continue as per Cooperative Agreement. These study plots would continue to provide valuable information in reference to vegetation, soils, and livestock grazing.

Limiting ORV use to existing roads and trails north of State Road 506 (116,000 acres) would continue to mimimize the amount of surface disturbance in that area.

In summary, there would be no significant impacts to vegetation condition and availability. There would be some vegetation loss due to soil erosion. There would be no way to monitor vegetation loss. The amount of vegetation taking on the wolf plant appearance would be minimal compared to the rest of the vegetation of the entire Range.

Livestock Grazing

Several areas on the Range continue to have a fair rate of vegetation loss due to soil erosion and sedimentation. Without monitoring studies, there would be no way to document any changes in vegetation. Without watershed management plans, it would be more difficult to reduce losses in vegetation.

Utilization by livestock in certain areas is low due to the fact that accumulation of old vegetation growth of some warm season forage species is to the point where livestock or wildlife cannot utilize the current year's growth. Without a prescribed burn and monitoring studies, there would be no way to evaluate the effects of burning on these species and their important values to livestock and wildlife.

No prescribed burning would result in the continued uneven distribution of livestock in certain areas. The use on certain warm season grass species would continue to be at a low level.

In summary, there would be no significant impact on livestock grazing. Livestock forage would be readily available for livestock even without watershed management plans and prescribed burns.

Wildlife

Under this alternative, there would be a potential for impacts to wildlife resulting from an unclear authority for issuance of ROWs. Confusion resulting from this uncertainty could lead to failure to incorporate mitigation for wildlife and noncompliance with the Endangered Species Act (ESA) if endangered species are affected.

Impacts to wildlife resulting from closure of McGregor Range to locatable, leasable, and salable mineral entry would be long-term benefits derived from continued protection of all habitats and species from surface and human presence disturbances that are associated with these actions.

The lack of watershed monitoring studies and watershed management plans would impact wildlife and habitat because there would be no mechanism for controlling erosion problems affecting wildlife habitats. Erosion problems would continue over the long-term with little other than casual attention from other activity plans or actions.

Preclusion of fire from vegetation/habitat management programs would limit the ability to establish or re-establish habitat conditions which would be beneficial to a selected species of plants, animals, or biotic communities. Prescribed fire is a tool that insignificantly influences the vegetation community toward a goal which is needed to either improve a habitat

toward an ecosystem climax, a successional stage, or toward more or less artificial disclimax.

Fire is and has been a naturally occurring factor in maintaining certain ecosystems such as grasslands. The lack of fire, coupled with other factors, has been a major influence on the conditions of western ranges over the past 100 years. On the other hand, however, misuse of fire by too frequent use or use on fire sensitive communities, such as black grama grasslands are believed to change the community structure to something other than what was there originally, a disclimax. In this case, other animal species would benefit at the expense of the species desired. Management goals to maintain those communities, would, therefore, not be met. Impacts to wildlife resulting from precluding the use of fire on McGregor would apply to those species using the Mesa Grassland, Mesa Hill, and Sacramento Foothills habitats. These species including the grassland threatened and endangered species, pronghorn antelope, and mule deer would be affected because management goals would not be met because fire in many cases is the only physically and economically feasible way to manipulate these habitats.

Management of the four grassland study sites under the existing Cooperative Agreement would continue to benefit wildlife requiring these habitats through long-term by ensuring the presence of at least 3,910 acres of climax black grama grassland on McGregor Range. In addition, research conducted by NMSU within these areas would benefit wildlife through better understanding of the needs of the habitats.

Not establishing vegetation sale areas would be beneficial to all species of wildlife and wildlife habitat. There would be no increase in surface disturbance, no loss of vegetation, and no additional human disturbance factors.

Impacts on wildlife and wildlife habitat of not conducting vegetation monitoring studies would be significant. As with watershed monitoring, there would be no way to identify specific vegetation problems and formulate solutions. Existing problems would likely continue as would habitat degradation. There would be no assessment of plant communities outside of the grazing units which would be required information for management of wildlife habitats.

The lack of forage reservations for wildlife outside of the livestock grazing area would not have a significant impact on wildlife itself.

Only forage consumption by Army activities, such as fire, would occur. Reservation of forage is designed to bring attention to wildlife needs for food and cover should management emphasis change.

Continuation of the Co-Use Area HMP would benefit wildlife and habitat in several ways. It would be one of two ways monitoring of vegetation and animals could be conducted. The existing grazing management plan would be the other way. Habitats within the HMP area would continue to be monitored. Problems with habitat and animal populations would be identified and solutions formulated. However, there would be no opportunity to split the HMP area and manage the pronghorn habitat together with that outside of McGregor Range. This would prevent managing the Otero Mesa pronghorn antelope herd as an ecological unit under one plan. Management opportunities may be lost in the shuffle between preparation and implementation of two plans. In addition, occupied pronghorn habitat below Otero Mesa to the west would not be managed as part of that ecological unit and the importance of that area to the rest of the habitat may never be known. As with the above section of pronghorn habitat below the Mesa, the remaining portions of McGregor outside of the grazing units would not be intensively managed. Animal populations and habitats would continue in current trends through the long-term. Because no monitoring would be conducted as well, the existence of problems or unique habitat areas might not be known and those would not be managed.

Impacts of not providing for establishment of a Sikes Act program on McGregor would be the loss of potential funds for accelerating the wildlife and habitat management program on the Range. This would apply to the Co-Use Area HMP since the remaining areas would not be monitored or managed.

Continuation of the existing situation for Animal Damage Control (ADC) would not allow BLM to become more involved with the program through consideration of ecosystem impacts. BLM would continue to authorize ADC without knowing the full impacts of that authorization. In addition, there would be no requirement to inventory and monitor predator populations to provide data for

making the decisions on whether or not to authorize ADC.

Continuation of the current deer hunting strategy would have a long-term impact on the deer herd north of State Road 506 on McGregor. The current hunt, which is conducted during the rut in December, is depleting the older age bucks. During the rut, most large bucks are preoccupied with breeding and become more susceptible than normal to hunter kill. Although hunting during the rut is an accepted practice in some areas, it conflicts with the current management strategy for the McGregor Range area which is to provide a quality hunt. In this case a quality hunt is defined as one that provides an opportunity to bag a larger, older buck. Therefore, the application of the hunt and the management strategy are incompatible. Continuation of the trend in selecting for older bucks could possibly deplete the buck population and decrease breeding success and therefore reduce the population. Also, continued selection of larger bucks might deplete the genetic pool for those traits contributing to "large bucks" which are valuable from a recreation standpoint.

Impacts on wildlife and habitat of closure of the area to public recreation would be limited to long-term benefits derived from continued protection of all habitats and species from surface and human presence disturbances that are associated with these actions. There would be a line of sight disturbance impact on most game species and many nongame species.

Continuation of the existing ORV limitation to designated roads and trails north of State Road 506 (116,000 acres) would be beneficial by maintaining, not increasing, current levels of disturbance and habitat modification that is caused by off-road travel of vehicles. These type impacts would be cumulative.

In summary, this alternative would provide for continuation of the current management program for wildlife, however, there would be no management by BLM on 337,000 acres of the Tularosa Basin. There would be no change in the operation of the ADC program, no revision of the Co-Use Area HMP, or completion of other HMPs on McGregor. No monitoring studies for any resource would be conducted that would provide useful information for wildlife management. There would be no consideration for biological needs of game species or management goals when establishing dates allowable for hunting seasons. There would be little change in current trends of wildlife populations, as influenced by other resource uses since there would be no expansion of other resource programs on McGregor.

Recreation

Public access for recreation purposes would continue to be denied. However, during prescribed periods the public would be allowed access for hunting purposes.

Areas open to hunting and hunting periods would not change under this alternative. Increases in hunter opportunities are expected because implementation of the Co-use HMP would lead to increased game populations.

Visual Resources

Some minor impacts to visual resources could occur from projects associated with implementation of the Co-Use area HMP. However, each action would be reviewed to consider impacts to visual resources and mitigation as needed, so no significant impacts are anticipated. The minor impacts would be occurring on Visual Class III and IV land.

Limiting ORV use to existing roads and trails north of State Road 506 (116,000 acres) would continue to minimize the potential for additional surface disturbance in that area.

Cultural Resources

No specific direction regarding issuance of land use authorizations would affect management of cultural resources. Planning would be all but impossible under these circumstances and cultural resource protection would be severely hampered. Clear identification of the agency responsible for the issuance of land use authorizations and the resulting cultural clearances is imperative.

Data should be shared in order to identify areas of cultural concentrations, and any cultural anomalies which would affect cultural analysis or management in other areas.

Under the No Action Alternative, no mineral exploration and development, no watershed management plans, no prescribed burning, and no vegetation sale areas would present both positive and negative effects upon cultural resource management. This would result in no direct or indirect damage to cultural resources but fewer cultural resources would be identified as a result of clearance related activities.

Continuation of the Co-Use area HMP would have a positive effect on cultural resource management by requiring cultural clearances for any wildlife construction projects. Not developing HMPs for the rest of McGregor Range would result in reducing the opportunities for cultural clearances.

Denying public recreation except for hunting would result in a positive effect on cultural resource management by limiting public access and damage to cultural resources. Providing for hunting during prescribed periods could result in a negative effect on cultural resource management by allowing access to areas containing cultural resources.

Limiting ORV use to existing roads and trails north of State Road 506 (116,000 acres) would continue to limit access and damage to cultural resources if the restrictions are fully enforced. Continued ORV use in the Escondida Site being limited to existing roads and trails would result in direct effects on cultural resources at Escondida Pueblo in that those existing roads and trails are directly causing damage to the site as well as allowing increased access. Damage to Escondida Pueblo would increase if the site were to remain unfenced, resulting in a loss of data recovery potential.

Army issuance of research permits without stipulations requiring notification, input, and some degree of control by BLM could result in a negative effect on cultural resource management.

Continuity of the data base management for the cultural resources on McGregor Range must be established and maintained for research to be viable and the results conclusive.

In summary, impacts on cultural resources would increase to a significant level under this alternative. Those factors causing damage to cultural resources include the continuing ORV use in Escondida Site and allowing Escondida to remain unfenced. A lack of direction as to who would issue land use authorizations would directly affect cultural resources through loss of program control and/or input. Army issuance of land use authorizations and research permits would have negative results without BLM notification, input, and some degree of control.

Social and Economic Conditions

The continued closure of mineral leasing on the Range would continue to cause the State, County, and the Army to haul in needed minerals for road repair and maintenance. The closing of minerals would also limit the area's income and employment from mineral mining and leasing businesses.

The continued closure of mining on the Range would be supported by some people because of the visual scars mining may leave or its disturbance to wildlife and recreational opportunities. Continued closure of mining would be opposed by some people who would like to utilize the available minerals on the Range, especially private mining businesses.

Having no vegetation sales on the Range could limit the amount of vegetation available to the area. There are people who would like to harvest vegetation from the Range. Other people would support no vegetation sales in order to preserve native plant species.

Predator control on the Range is both opposed and supported by members of the public. Some feel that more predator control is needed because of the livestock on the Range. Others feel that there is too much control currently, and support no control or restrained control in the future.

Denying public recreation on the Range besides hunting is opposed by some who would like to use the Range for hiking, access to the Culp Canyon WSA, and other types of recreation. Hunting on the Range is supported by the public, but some people would like the hunting season to be expanded beyond its current periods. McGregor Range provides hunting for approximately 460 hunters per year.

There is much public support for restricting ORV use to existing roads on the Range for the

preservation of scenic resources and natural qualities. Restricting ORV use for the protection of cultural sites is also supported.

In summary, public attitudes and the area's economy would primarily be unaffected by the resource uses described above.

Alternative B

Lands

Records would be noted for management enhancement; grant stipulations would ensure control through an environmental assessment decision within authorized areas and be consistent with PL 99-606 (McGregor Range Withdrawal) and PL 94-579 (Federal Land Policy and Management Act).

Access

The actions proposed under Alternative B would not have any significant impacts on access. (See the Continuing Management Guidance section of this Chapter for a discussion of impacts that apply to all alternatives.)

Minerals

Locatable Minerals

Under this alternative, locatable minerals would continue to be withdrawn and therefore opportunities to develop locatable minerals on McGregor Range would not occur. Based on current resource and economic information there would be no significant impacts to locatables.

Leasable Minerals

Oil and gas and geothermal resources would be open to leasing and development under this alternative in areas shown on Map 2-3 (45,760 acres).

Geothermal resources would probably not be affected by this alternative. The resources are most likely to occur near Orogrande. This area would not be attractive to industry because of the remote location and lack of high temperature. The availability of good groundwater for irrigation is a strong factor in determining whether a greenhouse operation is feasible in an area. Water is not generally available in that area and electrical generation requires very high temperatures.

Under this alternative, oil and gas leasing and development would be affected by several actions. Land-use authorizations such as rights-of-way across Army land to oil and gas developments would be restricted by various protective stipulations. Disposal of caliche and sand and gravel would benefit the leasing and development of oil and gas because the materials would be readily available to plate access roads and drill pads. Protective stipulations imposed by visual resource management could adversely affect leasing and development of oil and gas resources. These stipulations could result in the relocation of oil and gas development sites. This may cause hardships on industry because most areas are already heavily controlled by the Army and several restrictive stipulations.

In summary, leasable minerals would only be moderately affected under this alternative. The opening of 45,760 acres to leasing and development would enhance the mineral resources because there would be more opportunity for data collection and exploration. This is considered insignificant due to the low potential for occurrence. Army stipulations and BLM restrictions for the protection of sensitive resources would adversely affect the development of leasable minerals to a small degree.

There would be no effect on other leasables because there is no known potential for occurrence.

Salable Minerals

Under this alternative, disposal of salable minerals would be authorized in areas shown on Map 2-3 (287,360 acres). Land-use authorizations such as rights-of-way for access roads, pipelines, and other actions requiring the use of mineral materials would affect the salable program. Disposal of caliche, blow sand, and sand and gravel would be authorized to qualified users with the concurrence of the Army. Leasing and development of oil and gas would affect the salable minerals program because development of access roads and drill pads would require the use of mineral materials to accommodate heavy equipment. In the oil and gas industry, use of

caliche is common for access roads and drill pads. Visual resource management stipulations could require relocation of extraction sites as could the wildlife recommendation of staying out of arroyo riparian areas. These two activities could cause the extraction costs of mineral materials to rise because of longer haul distance and more expensive reclamation requirements.

Overall, only minor impacts to the existing and future supply of mineral materials would be anticipated under this alternative. Enhancements to mineral material development would be only slightly greater than under the existing situation. Mineral materials have been used on McGregor Range with little impact to other resources. Under this alternative, one use authorization per year for the next 20 years would result in surface disturbance of 1 acre per year which would be reclaimed according to requirements set forth by BLM regulations. This impact is considered insignificant.

Air, Soil, and Water Resources

None of the actions proposed under this alternative would have any significant long-term impact on air quality.

Under this alternative, the BLM would issue all nonmilitary land use authorizations. Mitigating measures would be established to minimize any impacts by any surface disturbing activities.

Surface disturbance would occur on an estimated 14 acres per year of land open for oil, gas, and geothermal leases. There would be potential for soil erosion and gully establishment. With mitigating measures, short-term effects would be soil disturbance while the long-term effects would be soil stabilization by either mechanical or natural means.

There would be about 1 acre per year of surface disturbance on the 287,360 acres open to salable materials disposal. Soil erosion and gully establishment would be possible in most areas. Mitigating measures would be established to reduce any impacts caused by any surface disturbing activities

Watershed management plans would be developed for 86,450 acres in the livestock grazing area. Mechanisms such as spreader dikes, earthen tanks and diversion dams would reduce and stabilize areas currently showing soil erosion or sedimentation. The areas that are identified for watershed management plans are made up of sensitive soils.

Monitoring studies conducted throughout the entire McGregor Range would identify and document any continuing erosion problems that may be occurring.

Prescribed burning has been identified for consideration on 220,800 acres in the livestock grazing area. Removal of vegetation species could result in some short-term soil loss. Some surface disturbance would occur as a result of the use of vehicles which would be used to monitor the burn.

Monitoring studies would be used to identify and document any vegetation removal or destruction by natural or man-made causes over the entire Range.

Limiting ORV use to designated roads and trails would minimize the amount of surface disturbing activities which in turn would minimize soil erosion and gully establishment.

Under this alternative, the BLM would issue research permits on cultural sites. Most cultural sites are located on very sensitive soils. These areas have a very high potential for soil movement by wind and water. Mitigating measures would be established to minimize any impacts caused by surface disturbing activities.

The overall impacts to soil and water resources would be positive through the stabilization and reduction of soil erosion and sedimentation which would occur on 86,450 acres as a result of proposed watershed management plans. Vegetation density and vigor would also increase as a result of the watershed management plans.

Vegetation

Under this alternative, the BLM would issue all nonmilitary land use authorizations. Surface disturbing activities would have a very high potential for vegetation removal or disturbance. Upon the issuance of all land use authorizations, mitigating measures would be established to minimize any impacts caused by surface disturbing activities.

The BLM would issue oil, gas, and geothermal leases which could result in some vegetation removal as a result of activities by the lessees. Short-term effects would be the removal of vegetation on approximately 14 acres per year and the long-term effects would be the revegetation of the disturbed areas by natural or mechanical means.

The disposal of salable materials would result in some vegetation removal and disturbance on about 1 acre per year. Long-term effects would be the reclamation of vegetation.

Watershed management plans would be developed on 86,450 acres. The protection of vegetation due to soil loss would occur through the use of certain identified mechanisms which include spreader dikes, diversion dams, and earthen tanks. Reduction of soil movement would aid in the reduction of vegetation loss. These watershed management plans would be developed in areas showing high amounts of soil and vegetation loss.

Monitoring studies would be conducted under this alternative which would identify areas of continuing vegetation losses which are a result of watershed management problems. These studies would occur throughout the entire McGregor Range.

Under this alternative, 220,800 acres are identified for consideration of prescribed burning. Prescribed burning would result in the removal of vegetation species which have accumulated over the years. Removal of old vegetation would result in the increase in quantity and quality of certain species.

Management of four vegetation study sites (3,910 acres) would continue as per the Cooperative Agreement. These study plots would continue to provide valuable information in reference to vegetation, soils, and livestock grazing.

Monitoring studies would be established which would identify and document areas showing problems with vegetation removal and destruction due to natural or man caused activities. These studies would occur throughout the entire Range.

Under this alternative, vegetation disturbance would be held to a minimum with the limitation of ORV use to designated roads and trails

BLM would issue research permits on cultural sites. Mitigating measures would be established to minimize the impacts caused by any surface disturbing activities.

Overall, impacts on vegetation would result in an increase in density and vigor for most vegetation species. An increase in vegetation density would help stabilize and reduce soil erosion with critical soils on 86,450 acres. The livestock grazing program would benefit from an increase in vegetation vigor as a result of prescribed burning.

Livestock Grazing

Under this alternative, the BLM would issue all nonmilitary land use authorizations. Mitigating measures would be established to minimize impacts to livestock caused by surface disturbing activities.

The issuance of oil, gas, and geothermal leases would result in surface disturbing activities on an estimated 14 acres per year. Short-term effects would be the loss of forage species for livestock. The long-term effects would be the reclamation of the disturbed sites either through natural or man-made means which would result in additional forage.

The BLM would conduct salable materials disposal on 287,360 acres which would result in some loss of soil and valuable forage for livestock consumption on about 1 acre per year in the short-term due to surface disturbing activities. Long-term effects would be the additional forage by reclamation of the disturbed sites either through natural or man-made means.

Watershed management plans would be developed for 86,450 acres. Mechanisms such as spreader dikes, diversion dams, and earthen tanks would be used to stabilize and reduce soil erosion. The loss of livestock forage should be reduced in these areas. Livestock distribution should even out in some areas.

Monitoring studies would be established throughout the entire Range which would identify areas showing high amounts of soil erosion and sedimentation and vegetation loss. Loss of

vegetation could result in the reduction of AUMs and poor livestock distribution. Studies can be used to help identify actions to be taken to solve any existing resource problems.

Under this alternative, 220,800 acres of vegetation are identified for possible prescribed burning. Results would be the removal of old forage growth that has accumulated over the years and promote quantity and quality of certain forage species.

Monitoring studies would be established to identify and document areas showing problems with vegetation disturbance and destruction. Problems resulting in vegetation disturbance and destruction could be a result of natural or man caused activities.

Predator control program would continue through ADC plan in coordination with APHIS and NMDGF. Predator populations would be monitored and kept at a level so as to minimize livestock losses due to predation.

The fencing off of the Escondida Pueblo Site (40 acres) would not have any significant impact on livestock grazing.

In summary, livestock grazing would improve as a result of the actions proposed under this alternative. There would be an increase in AUMs, improved livestock distribution, improved livestock weight gains, and improved livestock condition. Forage species density and vigor would also increase as a result of prescribed burning.

Wildlife

Impacts of a clear delegation of authority for processing land use permits would provide for an efficient means with which to incorporate mitigating measures for wildlife concerns either by the BLM or the Army.

Closure of McGregor Range to locatable minerals would be beneficial to wildlife populations and habitat because there would be no uncontrolled surface disturbance associated with mining claims and mining operations under the mining laws. Disturbance and habitat modification levels would remain unchanged.

Leasing of oil, gas, and geothermal resources on 45,760 acres on McGregor would predispose the existing high density deer herd to surface disturbance, habitat fragmentation, and animal disturbance, including poaching associated with exploration and development activities. These impacts would be cumulative and could be severe where development occurs due to the presence of roads, pipelines, facilities, personnel, and subsequent public access (legal and illegal). Mitigating measures would be of limited use, since lessees are entitled to develop their lease. The deer population would likely decline as a result.

Sale of mineral materials over 287,360 acres of the Range would adversely impact wildlife habitats, particularly arroyo riparian habitats, due to animal and surface disturbance. The arroyo riparian habitat totals only 4.6 percent of McGregor Range; however, it supports more species of birds and mammals than any other habitat on the Range. Faunal diversities are much higher than surrounding uplands. BLM (1985) shows bird and mammal diversity indices in arroyo riparian habitats to be 2.71 and 2.09, respectively, compared to creosote rolling upland habitats at 1.96 and 1.34. Executive Order 11990 directs agencies to eliminate or at least minimize impacts to wetlands such as arroyos to protect natural values. Mitigating measures could be devised for most of the impacts, however the disturbance factor would remain for animals using the area during extraction. The impacts of channel disturbance on arroyo vegetation are poorly understood. There could be a loss of or change in vegetation cover due to altered water availability for arroyo plants which would adversely affect animals using that area. These sale areas would generally be small (approximately 1 acre) and would disturb less than 1 percent of the arroyo riparian habitat; however the impacts would be cumulative. There is no estimate of the current percent of the habitat currently disturbed by other uses. Mineral material removal would be less detrimental in areas away from arroyos.

Preparation of watershed plans for 86,450 acres would provide a means to improve areas of erosion that adversely affect wildlife through habitat modification. The initiation of watershed studies would identify those areas in need of

intensive watershed management that would benefit wildlife.

Management of the four grassland study sites under the existing Cooperative Agreement would continue to benefit wildlife requiring these habitats through the long-term by ensuring the presence of at least 3,910 acres of climax black grama grassland on McGregor Range. In addition, research conducted by NMSU within these areas would benefit wildlife through better understanding of the needs of the habitats.

The preclusion of vegetation sale areas would be beneficial to wildlife since the plant species that would be considered for sale, such as yuccas and grass seed, are generally used by wildlife for food sources, nesting platforms, or breeding display stations.

Establishment of vegetation monitoring studies throughout McGregor Range would be beneficial to wildlife management interests due to information gathered on existing or potential problems and data on the types and extent of plant communities that affect wildlife numbers and distributions.

Objectives for use of prescribed fire on up to 220,800 acres would be to improve rangeland condition and wildlife habitat. Various prescription strategies would cause specific changes in vegetation composition, i.e. reduction of shrubs, increase in grass or forbs, or for specific types of grass including warm or cool season. There is potential for adverse modification of fire sensitive grassland communities, such as black grama, by using improper prescriptions such as burning too frequently, burning following several years of poor growth/precipitation, and moderate to heavy grazing preceeding or following a burn especially in conjunction with poor precipitation (Wright and Bailey 1982). Wright and Bailey (1982) indicate that grass communities with alkali sacaton, tobosa, and blue grama are more fire resistant, but they also can be reduced or eliminated by improper use of fire. Modification of the plant community directly influences the type and number of wild animals using that particular area due to the loss of plant cover and subsequent problems with erosion and undesirable plants. Habitats could be converted from grass flat or grass rolling uplands to mixed shrub types with the misuse of fire. Therefore, there is potential for adverse impacts to all grassland species including pronghorn antelope, and endangered species including Baird's sparrow, McCown's longspur, and reintroduction projects for the aplomado falcon. Proper use of fire could also be a benefit to the above species.

Since prescribed burning objectives would also be addressed in proposed HMPs for management of the above species, there is potential to coordinate objectives and derive maximum benefit for vegetation and wildlife interests. All of the above impacts would apply to prescribed fire for wildlife management on McGregor Range.

Impacts of reservation of forage for wildlife would be limited to identification of wildlife needs for vegetation as food and cover to other resource uses.

Inclusion of the occupied pronghorn antelope habitat on and around Otero Mesa in the Otero Mesa Pronghorn HMP off of McGregor would provide for an efficient means to manage the Otero Mesa grasslands as an ecological unit in one management plan. In this manner there would be less chance to lose important aspects of management in a paper shuffle between two or three management plans.

Revision of the existing Co-Use Area HMP would allow for evaluation and addition of new planning decisions, goals, objectives, and techniques, such as the prescribed fire addressed above, to be incorporated and implemented.

Development of an HMP outside of the livestock grazing area would provide a means to inventory those habitats, identify problems, and implement ways to correct those problems for both wildlife populations and habitats.

Establishment of wildlife monitoring studies outside of the livestock grazing areas would provide for a monitoring program to track habitat and population problems that may otherwise not be addressed.

Establishment of a Sikes Act stamp program would, if technically feasible, provide funds to accelerate implementation of habitat management plans, site specific research, and flight time for monitoring habitats and populations. It

would provide the hunting public with a monetary interest on McGregor Range.

Operation of predator and rodent control activities under this alternative would be much the same as is presently occurring. Animal Damage to livestock and range improvements would be reduced. As a result of the population monitoring, BLM would have a better understanding of the currently poorly understood effects of animal damage control on McGregor ecosystems.

Limitation of public hunting to prescribed periods would promote an approach to hunting that is consistent with the goals and objectives for managing the game populations on McGregor. Public hunting would be conducted during periods least detrimental to the populations and consistent with particular management goals. Otherwise, populations would be controlled directly by NMDGF. There would be a possible small loss in the number of available public hunting permits. The effect of this alternative on the mule deer population would be to conduct a hunt without the added vulnerability of older age (large) bucks. This age class would not be depleted excessively by implementation of the management strategy.

Providing limited access to the public for recreation, including hunting, would create less animal disturbance and habitat modification than full access. Limited access would create more disturbance and habitat modification than no access. Impacts would be similar to the existing situation.

Management of cultural resources would have little impact on wildlife or habitat. Fencing 40 acres around the Escondido Pueblo would provide a small refuge with denser vegetation cover.

In summary, this alternative would provide for slightly increased management emphasis on wildlife. Wildlife, watershed, and vegetation monitoring would be conducted on the 337,000 acres of the Tularosa Basin. The BLM would become more involved with the ADC program by monitoring the predator and other species populations to assess the impacts of ADC. Public hunting could occur within specified periods. Establishment of hunts would be conducted in accordance with the biological needs and established management goals. Public hunting would be limited to a specific period. Minerals leases and sales could have potentially major adverse impacts to arroyo riparian habitats and particularly to 45,760 acres of high density deer winter range under consideration for oil and gas leasing. Current trends in overall wildlife populations and habitat would continue or increase slightly due to management of watersheds, and monitoring of resource conditions.

Recreation

Public access would be allowed for hunting during prescribed periods consistent with the Army mission.

Although areas open to hunting and hunting periods would not change under this alternative, increase in hunter opportunities are expected. Revision of the existing Co-use HMP and the development of an HMP to include all habitats outside the livestock grazing area would lead to increased populations.

Visual Resources

Under this alternative, BLM would issue all public demand nonmilitary use authorizations on withdrawn land and mitigate impacts to visual resources. Salable materials disposal is estimated at one use authorization per year with total surface disturbance being about 1 acre per year. Oil and gas and geothermal activities are estimated at 14 acres per year. Land that would be impacted has been classified as Visual Class III and IV and it is not anticipated that there would be an acreage change in either visual class. Limiting ORV use to designated roads and trails would lessen the potential for additional surface disturbance. Minor impacts could occur from projects associated with HMP implementation inside and outside of the livestock grazing area. All actions would be reviewed to consider impacts to visual resources and mitigation as needed, so no significant impacts are forecast.

Cultural Resources

BLM issuance of all nonmilitary land use authorizations would have a positive effect on cultural resources by allowing BLM direct control of any cultural resources encountered in the course of projects authorized.

Under this alternative, having locatables closed and no vegetation sale areas would result in both positive and negative effects. Positive in that damage to cultural resources would directly be avoided, negative in that there would be no opportunity for cultural clearances/surveys.

BLM issuance of oil, gas, and geothermal leases; conducting salable materials disposal; developing watershed management plans; consideration of 220,800 acres for prescribed burning; establishing Sikes Act Stamp programs; denying public recreation; limiting ORV use to designated roads and trails; fencing and closing ORV use in the Escondida Pueblo site (40 acres); and BLM issuing of research permits would have a positive effect on cultural resources.

In summary, negative impacts upon cultural resources would not increase over the existing situation to a significant level as a result of this alternative. Sufficient safeguards exist to ensure no adverse effects upon the resources as a result of BLM undertakings.

Social and Economic Conditions

The public has been confused in the past over what agency, BLM or the Army, is in charge of issuing land use authorizations on McGregor Range. This alternative would clarify these roles by making the BLM issue all nonmilitary land use authorizations on withdrawn land.

The continued closure of locatable minerals would be supported by some of the public because it would minimize the amount of visual scars on the land, and the effects of mining on wildlife. However, the continued closure of locatables would limit the amount of locatable minerals available to the area.

By issuing oil, gas, and geothermal leases on 45,760 acres and conducting salable material disposal on 287,360 acres, the available supply of these minerals to the area could increase, along with possible increases in the area's employment and income. The increases would be positively related to the number of leases issued and support by the Army. The leasing of oil, gas, and geothermal minerals, and the disposal of salable materials would also be opposed by some people because of the visual scars they may leave.

If the entire 45,760 acres open for oil and gas leasing is leased at the rental rate of $3 per acre per year, the approximate income produced for BLM per year would be $137,280. If approximately 5,000 of those acres were leased for geothermal at the rental rate of $1 per acre per year the approximate income would be $5,000. Additional income from royalties may also be produced.

Having no vegetation sales on the Range may limit the amount of vegetation to the area. There are people who would like to harvest vegetation from the Range. Other people would support no vegetation sales in order to preserve native plant species.

Establishing a Sikes Act stamp program on McGregor Range may be opposed by some hunters because of the extra cost of a license. The Sikes Act stamp would be supported by other people because of the extra income it would generate for habitat management and other wildlife improvements.

The cost per hunter above a regular license would be $5.25. An estimated 460 people would probably hunt on McGregor Range per year which would be approximately $2,400 in Sikes Act stamp money for wildlife habitat and research on the Range.

People against predator control may prefer this alternative because it gives the BLM greater command over predator control on the Range. The inventory and monitor of predator populations may also be favored by this segment of the population.

Denying public recreation except hunting on McGregor Range is opposed by those members of the public who would like to use the Range for hiking, access to Culp Canyon WSA, and other types of recreation.

There is much support for restricting ORV use to existing roads on the Range for the preservation of scenic resources and natural qualities. Limiting ORV use to designated roads and trails would also help promote public safety and protect cultural sites.

In summary, some minor impacts to social and economic conditions may occur under this alternative. Public attitudes would be positively affected by the clarifying of roles

between BLM and the Army. The area economy could be affected by oil, gas, and geothermal leasing along with the disposal of salable materials. The amount of the effect would be dependent on the market demand for minerals and the Army's support of proposed leasing and disposal sites.

Alternative C

Lands

Records would be noted for management enhancement; grant stipulations would ensure control of all of the resources through an environmental assessment within authorized areas and be consistent with PL 99-606 (McGregor Range Withdrawal) and PL 94-579 (Federal Land Policy and Management Act).

As a general rule, the BLM would be the lead agency except as provided in CEQ 1501.5 for projects that involve both withdrawn and Army acquired lands.

ROW grants for withdrawn land would be issued by the BLM and the Army would issue ROW grants for Army acquired land.

On ROWs that will serve the withdrawal, the BLM will be the authorizing agency for nonmilitary uses unless the military is the owner of the project.

Access

The actions proposed under Alternative C would not have any significant impacts on access. (See the Continuing Management Guidance section of this Chapter for a discussion of impacts that apply to all alternatives.)

Minerals

Locatable Minerals

Under this alternative, locatable minerals would continue to be withdrawn and therefore, opportunities to develop locatable minerals on McGregor Range would not occur. Based on current resource and economic information there would be no significant impacts to locatables.

Leasable Minerals

Oil and gas and geothermal resources would be open to leasing and development under this alternative in areas shown on Map 2-6 (100,000 acres).

Geothermal resources would probably not be affected by this alternative. The resources are most likely to occur near Orogrande. This area would not be attractive to industry because of the remote location, lack of high temperature, and absence of inexpensive land for development. The availability of good groundwater for irrigation is a strong factor in determining whether an operation is feasible in an area. Water is not generally available in that area.

Under this alternative, oil and gas leasing and development would be affected by several actions Land-use authorizations such as ROWs across Army land to oil and gas developments would be restricted by various protective stipulations. Visual, cultural, and wildlife resources stipulations would affect the placement of oil and gas facilities as would Army requirements causing either impossible situations and more expensive methods. Disposal of caliche and sand and gravel would have an effect on the leasing and development of oil and gas. These materials would be available to plate access roads and drill pads and the oil and gas industry would not have to transport them from distant sites.

There would be no effect on other leasables because there is no known potential for occurrence.

In summary, leasable minerals would not be greatly affected under this alternative. The opening of 100,000 acres to leasing and development would enhance the mineral resources because there would be more opportunity for data collection and exploration. This is considered insignificant due to the low potential for occurrence. Army stipulations and BLM restrictions for the protection of sensitive resources would adversely affect the development of leasable minerals to a small degree.

Salables

Under this alternative, disposal of salable minerals would be authorized in areas shown on

Map 2-6 (287,360 acres). Disposal of caliche, blow sand, and sand and gravel would be authorized to qualified users. These stipulations would be developed as a result of this plan and a Memorandum of Understanding between the Army and the BLM.

Land-use authorizations such as ROWs for access roads, pipelines, and other actions such as leasing and development of oil and gas would affect the mineral materials program.

Development of access roads and drill pads would require the use of mineral materials to accommodate heavy equipment. In the oil and gas industry, use of caliche is common for access roads and drill pads. Visual resource management stipulations could require relocation of extraction sites to avoid having extraction sites next to roadways. Wildlife stipulations may also require relocation so that extraction sites are not within arroyo riparian areas. These two activities could cause the extraction costs of mineral materials to rise because of the longer haul distances and more expensive reclamation requirements.

Overall, only minor impacts to the existing and future supply of mineral materials would be anticipated under this alternative. Enhancements to mineral material development would be only slightly greater than under the existing situation. Mineral materials have been used on McGregor Range with little impact to other resources. Under this alternative, one use authorization per year for the next 20 years would result in surface disturbance of 1 acre per year which would be reclaimed according to requirements set forth by BLM regulations. This impact is considered insignificant.

Air, Soil, and Water Resources

None of the actions proposed under this alternative would have any significant long-term impact on air quality.

Under this alternative, the BLM would issue all nonmilitary land use authorizations and would also be the lead agency for projects across both withdrawn and military lands. Mitigating measures would be established to minimize any impacts caused by surface disturbing activities.

Oil, gas, and geothermal leases would result in some surface disturbing activities. Some areas have potential for soil erosion and gully establishment over a long period of time. With mitigating measures, short-term effects would be some soil disturbance on an estimated 14 acres per year while the long-term effects would be soil stabilization by either mechanical or natural means.

Salable materials on 287,360 acres would also result in some surface disturbance on about 1 acre per year. Soil erosion and gully establishment would occur in most areas. Mitigating measures would be established to reduce any impacts caused by any surface disturbing activities.

Watershed management plans would be developed for 48,200 acres. Mechanisms such as spreader dikes, earthen tanks, and diversion dams would be built which would reduce and stabilize areas currently showing soil erosion or sedimentation. The areas that have been identified for watershed management plans are made up of sensitive soils.

Watershed monitoring studies would be conducted throughout the entire McGregor Range. Areas showing any continuing soil erosion or sedimentation would be identified, documented, and monitored.

Approximately 220,800 acres has been identified for consideration for prescribed burning. Removal of vegetation species could result in some soil loss. This loss would be short-term. Some surface disturbance would occur as a result of the use of vehicles which would be used to monitor the burn.

Under this alternative, the four vegetation study sites (3,910 acres) would be designated as an Area of Critical Environmental Concern (ACEC), and managed under the current Cooperative Agreement between the BLM, NMSU and the Army. Mitigating measures would be established to minimize impacts caused by any surface disturbing activities. Soil disturbance would be short-term. Information relating to soils found in these protected areas would be beneficial to agricultural research.

Vegetation sale areas (20,940) acres would be designated under this alternative. Mitigating

measures would be implemented to minimize any impacts caused by surface disturbing activities. Removal of vegetation would result in some soil disturbance which would be short-term while long-term affects would be soil reclamation by natural or mechanical means.

Monitoring studies would be conducted throughout the entire McGregor Range which would include identifying, documenting, and monitoring any vegetation removal and or destruction by natural or man-made causes.

Providing public access for occasional controlled recreation use could result in an increase of unauthorized ORV use in certain areas which would increase and accelerate soil erosion and sedimentation and gully establishment.

Limiting ORV use to designated roads and trails would minimize the amount of surface disturbing activities which in turn would reduce soil erosion and gully establishment.

Under this alternative, the BLM would issue research permits on cultural sites. Most cultural sites are located on very sensitive soils. These areas have a very high potential for soil movement by wind and water. Mitigating measures would be established to minimize any impacts caused by surface disturbing activities

The overall impacts to soil and water resources would be positive. Soil erosion and sedimentation would be stabilized and reduced on 48,200 acres with the use of watershed management plans. Soil loss would be short-term on prescribed burn areas. Vegetation density and vigor would also increase as a result of the watershed management plans and the prescribed burning.

Vegetation

Under this alternative, the BLM would issue all nonmilitary land use authorizations and would be the lead agency for projects across both withdrawn and Army lands. Mitigating measures would be established to minimize any impacts caused by surface disturbing activities.

Vegetation removal could occur on an estimated 14 acres per year as a result of activities by issuing oil, gas, and geothermal leases. Short-term effects would be the removal of vegetation while the long-term effects would be the revegetation of the disturbed areas by natural or mechanical means.

The disposal of salable materials would result in vegetation removal and disturbance on about 1 acre per year. Long-term effects would be the reclamation of these sites by revegetation through natural or mechanical means.

Watershed management plans would be developed on 48,200 acres. The protection of vegetation due to soil loss would occur through the use of certain mechanisms which include spreader dikes, diversion dams, and earthen tanks. The implementation of these mechanisms would be site-specific. Reduction of soil loss or movement would aid in the reduction of vegetation loss. These watershed management plans would be developed in areas showing high amounts of soil and vegetation loss.

Monitoring studies would be conducted throughout the entire McGregor Range. Areas showing active loss of vegetation and soil would be identified, documented, and monitored.

Under this alternative, 220,800 acres are identified for consideration of prescribed burning. Prescribed burning would result in the removal of vegetation species which have accumulated over the years. Removal of old vegetation would result in the increase in quantity and quality of certain species.

The four vegetation study sites (3,910 acres) would be designated an ACEC and would be managed under the current Cooperative Agreement between the BLM, NMSU, and the Army. Mitigating measures would be established to minimize the impacts caused by surface disturbing activities caused by any research. These protected areas would provide valuable agricultural information in relation to black grama grass in a pristine environment. ACEC designation would highlight the significant resource qualities of the sites.

Vegetation sale areas would be designated on 20,940 acres. Locations of vegetation sale areas would be coordinated with the Army. Mitigating measures would be established to minimize any impacts caused by surface disturbing activities. Removal of designated plant species would allow

for other vegetation species to better utilize available space and water.

Monitoring studies would be conducted over the entire McGregor Range. Studies would be used to identify, document, and monitor areas showing continuing problems with vegetation removal and destruction due to natural and man caused activities.

Under this alternative, the average use on key forage species should not exceed 50 percent.

Providing public access for occasional controlled recreation uses could result in an increase in unauthorized ORV use on the Range. This in turn could result in surface disturbance which could have negative impacts to vegetation species.

Limiting ORV use to designated roads and trails on 608,345 acres would result in a minimum amount of vegetation disturbance.

BLM would issue research permits on cultural sites. Mitigating measures would be established to minimize the impacts caused by any surface disturbing activities.

In summary, impacts on vegetation would result in an increase in plant density and vigor. Vegetation density would increase on the 48,200 acres proposed for watershed management plans. Prescribed burning would result in increased plant density and vigor. An increase in vegetation density would help stabilize and reduce soil erosion and sedimentation. Increased plant vigor would benefit the livestock grazing program.

Livestock Grazing

The BLM would issue all nonmilitary land use authorizations and would also be the lead agency for projects across both withdrawn and Army lands. Mitigating measures would be established to minimize impacts caused by any surface disturbing activities.

Issuing oil, gas, and geothermal leases would result in surface disturbing activities on an estimated 14 acres per year. Short-term affects would be the loss of forage species for livestock. The long-term affects would be the reclamation of the disturbed sites either by natural or mechanical means which could result in additional forage.

The BLM would conduct salable materials disposal which would result in some surface disturbance on an estimated 1 acre per year. Short-term affects would be some loss of livestock forage. Long-term affects would be reclamation of the disturbed sites by either natural or mechanical means.

Watershed management plans would be developed for 48,200 acres. Mechanisms such as spreader dikes, diversion dams, and earthen tanks would be used to stabilize and reduce soil erosion and sedimentation and vegetation loss. Livestock distribution should even out in some of these areas. Mechanisms to be used would be located in site-specific areas.

Monitoring studies would be established throughout the entire McGregor Range . These studies would help to identify areas showing high amounts of soil erosion and sedimentation and vegetation loss. Loss of vegetation could result in the reduction of AUMs and poor livestock distribution. Studies would be used to help identify possible actions to be taken to solve any existing resource problems.

Under this alternative 220,800 acres of vegetation are identified for possible prescribed burning. Results would be the removal of old forage growth that has accumulated over the years. The long-term effects would be the growth of more palatable and vigorous forage species for wildlife and livestock consumption.

The four black grama study sites (3,910 acres) would be designated as an ACEC, and would be managed as per the existing Cooperative Agreement by the BLM, NMSU, and the Army. Mitigating measures would be established to lessen the impacts on vegetation by any surface disturbing activities. These areas would provide useful agricultural data for grazing versus nongrazing in black grama grasslands.

Designation of 20,940 acres for vegetation sale areas is proposed under this alternative. Surface disturbance would occur in these areas. Short-term effects would be the removal of

vegetation. Long-term effects would be the reclamation of these areas.

Monitoring studies would be established to identify and document areas showing continuing problems with vegetation disturbance and destruction. Problems resulting in vegetation disturbance and destruction could be the result of both natural or man-made activities.

The current predator control program would continue through the ADC plan in coordination with APHIS and NMDGF. Predator populations would be monitored and kept at a level so as to avoid excessive livestock losses.

Providing public access for occasional controlled recreation uses could result in an increase in vandalism problems. Some of these problems include opening and closing water valves, removing floats off of drinking troughs, and leaving gates open. Vandalism could increase during uses other than hunting. In support of State game regulations, there would be no parking or camping during any hunting season, except in established camp sites, within 300 yards of any livestock or wildlife water. This could ease some of the potential problems dealing with vandalism.

The fencing off of the Escondida Pueblo Site (40 acres) would not have any significant impact on livestock grazing.

In summary, livestock grazing would increase as a result of the actions proposed under this alternative. There would be an increase in total AUMs, better livestock distribution, improved livestock gains, and improved livestock condition. Livestock forage would increase and stabilization and reduction of soil erosion and sedimentation would occur on approximately 48,200 acres. More vigorous, palatable plant species would occur as a result of prescribed burning.

Wildlife

Impacts of a clear delegation of authority for processing land use permits would provide for an efficient means with which to incorporate mitigating measures for wildlife concerns either by the BLM or the Army.

Closure of McGregor Range to locatable minerals would be beneficial to wildlife populations and habitat because there would be no uncontrolled surface disturbance associated with mining claims and mining operations under the mining laws. Disturbance and habitat modification levels would remain unchanged.

Leasing of oil, gas, and geothermal resources on 100,000 acres on McGregor would predispose the existing high density deer herd in the northeast section (45,760 acres) to surface disturbance, habitat fragmentation, and animal disturbance, including poaching, associated with exploration and development activities. These impacts would be cumulative and may be severe where development occurs due to the presence of roads, pipelines, facilities, personnel, and subsequent public access (legal and illegal). Mitigating measures would be of limited use, since lessees are entitled to develop their lease. The deer population would likely decline as a result. Leasing the northwest 54,240 acres would have the least impact to the deer herd. However, small game (quail) habitat would be affected in a similar manner, although the populations might not decline as much as deer would.

Sale of mineral materials over 287,360 acres of the Range would adversely impact wildlife habitats, particularly arroyo riparian habitats, due to animal and surface disturbance. The arroyo riparian habitat totals only 4.6 percent of McGregor Range; however, it supports more species of birds and mammals than any other habitat on the Range. Faunal diversities are much higher than surrounding uplands. BLM (1985) shows bird and mammal diversity indices in arroyo riparian habitats to be 2.71 and 2.09, respectively, compared to creosote rolling upland habitats at 1.96 and 1.34. Executive Order 11990 directs agencies to eliminate or at least minimize impacts to wetlands, which could include arroyo habitat, to protect natural values. Mitigating measures could be devised through the required site-specific EAs for most of the impacts, however the disturbance factor would remain for animals using the area during extraction. The impacts of channel disturbance on arroyo vegetation are poorly understood. There could be a loss of or change in vegetation cover due to altered water availability for

arroyo plants which would adversely affect animals using that area. These sale areas would generally be small (approximately 1 acre) and would disturb less that 1 percent of the arroyo riparian habitat; however, the impacts would be cumulative. There is no estimate of the current percent of the habitat currently disturbed by other uses. Mineral material removal would be less detrimental in areas away from arroyos.

Preparation of watershed plans for 48,200 acres would provide a means to improve areas of erosion that adversely affect wildlife through habitat modification. The initiation of watershed studies would identify those areas in need of intensive watershed management that would benefit wildlife.

Establishment of vegetation monitoring studies throughout McGregor Range would be beneficial to wildlife management interests due to information gathered on existing or potential problems and data on the types and extent of plant communities that affect wildlife numbers and distributions.

Designation of the four grassland study areas (3,910 acres) as an ACEC would provide little change in the current management situation for wildlife and wildlife habitat, except that management strategies would be locked in tighter and management of the areas would be more visible to the public. Habitat conditions within the four areas would be less likely to change.

Designating vegetation sale areas on 20,940 acres would increase disturbance of animals and destruction or modification of habitats. Removal of plants like yuccas would decrease available areas for nesting and breeding display in birds, and shade for pronghorn antelope. Structural diversity would be decreased for all species. Mitigation could be applied to provide a minimum density of plants to be left per acre. Removal of seeds from grasses would decrease available food supplies for granivorous birds in the immediate area. Site-specific activity plans, EAs, and land use objectives would dictate the type of plants, amount, and mitigation measures.

Objectives for use of prescribed fire on up to 220,800 acres would be to improve rangeland condition and wildlife habitat. Various prescription strategies would cause specific changes in vegetation composition, i.e., reduction of shrubs, increase in grass or forbs, or for specific types of grass including warm or cool season. There is potential for adverse modification of fire sensitive grassland communities, such as black grama, by using improper prescriptions such as burning too frequently, burning following several years of poor growth/precipitation, moderate to heavy grazing preceeding or following a burn especially in conjunction with poor precipitation (Wright and Bailey 1982). Wright and Bailey (1982) indicate that grass communities with alkali sacaton, tobosa, and blue grama are more fire resistent, but they also can be reduced or eliminated by improper use of fire. Modification of the plant community directly influences the type and number of wild animals using that particular area due to the loss of plant cover and subsequent problems with erosion and undesirable plants. Habitats could be converted from grass flat or grass rolling uplands to mixed shrub types with the misuse of fire. Therefore, there is potential for adverse impacts to all grassland species including pronghorn antelope, and State-endangered Baird's sparrow and reintroduction projects for the aplomado falcon. Proper use of fire could also be a benefit to the above species. Since prescribed burning objectives would also be addressed in proposed Habitat Management Plans below for management of the above species there is potential to coordinate objectives and derive maximum benefit for vegetation and wildlife interests. All of the above impacts would apply to prescribed fire for wildlife management on McGregor Range.

Impacts of reservation of forage for wildlife would be limited to identification of wildlife needs for vegetation as food and cover to other resource uses.

Inclusion of the occupied pronghorn antelope habitat on and around Otero Mesa in the Otero Mesa Pronghorn HMP off of McGregor would provide for an efficient means to manage the Otero Mesa grasslands as an ecological unit in one management plan. In this manner there would be less chance to lose important aspects of management in a paper shuffle between two or three management plans.

Revision of the existing Co-Use Area HMP would allow for evaluation and addition of new planning decisions, goals, objectives, and techniques,

such as the prescribed fire addressed above, to be incorporated and implemented.

Development of an HMP outside of the livestock grazing area would provide a means to inventory those habitats, identify problems, and implement ways to correct those problems for both wildlife populations and habitats.

Establishment of wildlife monitoring studies outside of the livestock grazing areas would provide for a monitoring program to track habitat and population problems that might otherwise not be addressed.

Establishment of a Sikes Act stamp program would, if technically feasible, provide funds to accelerate implementation of habitat management plans, site specific research, and flight time for monitoring habitats and populations. It would provide the hunting public with a monetary interest on McGregor Range.

The impact of the predator management proposals under this alternative would be to create a system of ADC work differing from other public land. Predators and other animals would be monitored and decisions concerning animal damage control would be based on impacts of predator or other species removal to desired resource management goals and objectives and public safety. Times, areas, methods of control, and incidental take of non-target species would be monitored and managed for. This would promote a more informed approach to management of the entire Range by the BLM.

Under Alternative C, public deer hunting would be limited due to management constraints established to protect the older age bucks which would be in rut during the hunt and military uses of the Range. Bucks would be more susceptible to hunter kill due to preoccupation with breeding. For annual hunts conducted to manage for adult bucks, public deer permits could initially be reduced to as few as 100 for the entire Range but would increase as the adult buck population increased using the 40 percent goal for adult buck harvest. For hunts occurring every 2, 3, or 4 years, permit numbers may be raised to account for population expansion. The biological effect of the 40 percent goal would be to maintain and slowly increase the adult buck portion of the population, and adjust the overall population toward a generally accepted optimum sex ratio of approximately 20 bucks per 100 does. The doe portion of the population would continue to increase, therefore creating a need for periodic doe (herd reduction) hunts. This would increase the availability of hunting permits an unknown amount. The overall effect of this alternative would provide for management of quality populations of deer and pronghorn antelope.

Providing limited access to the public for recreation, including hunting, would create less animal disturbance and habitat modification than full access. Limited access would create more disturbance and habitat modification than no access. Impacts would be similar to the existing situation.

Limitation of ORV use to designated roads and trails on the entire Range would minimize habitat destruction and modification, and animal disturbance. The would be no significant increase in disturbance or habitat modification/destruction over existing levels. Closure of ORV use in the Escondida Pueblo site would be a minor beneficial impact by allowing regrowth of vegetation in disturbed areas.

Management of cultural resources would have little impact on wildlife or habitat. The fencing of a 40-acre portion of the Escondida Pueblo Site would provide a small refuge with denser vegetation cover.

In summary, this alternative would provide for a high level of management involvement by the BLM for the entire McGregor Range. The BLM would be fully involved with the operation of the ADC program. ADC would become an integral part of achieving renewable resource goals on McGregor. Oil and gas leasing would have potential to adversely impact arroyo riparian habitats and 45,760 acres of high density deer winter range in the northeast corner of McGregor. Mineral material removal from any arroyo riparian area may have major adverse impacts to wildlife. Vegetation sales on all or part of the 20,940 acres could have significant impacts to wildlife and wildlife habitat depending on the size of specific sales, consistency with management goals and effectiveness of mitigation measures, which would be determined in site-specific EAs. The overall effect of this alternative on wildlife would be one of increased management efficiency

for renewable resources while at the same time increasing public use and minerals development. There would be potential for a major decline of deer numbers on portions of the Range due to oil and gas development. Cumulative impacts to arroyo riparian areas due to mineral materials removal could be significant. There would be a concomitant decline in wildlife habitat condition and wildlife numbers with each new development.

Recreation

Public access would be allowed when hunting occurs during prescribed periods and for other controlled uses consistent with the Army mission.

Roads designated for hunter access could possibly be less than those roads presently existing. In that case, hunter access by vehicle would be reduced and hunters would have to rely more on foot or horseback travel. This could result in less dispersals of hunters into the area.

Although areas open to hunting and hunting periods would not change under this alternative, increase in hunter opportunities are expected. Revision of the existing Co-use HMP and the development of an HMP to include all habitats outside the livestock grazing area would lead to increased game populations.

Visual Resources

BLM would issue all public demand nonmilitary use authorizations and mitigate impacts to visual resources. Salable material disposal is estimated at one use authorization per year with total surface disturbance being about 1 acre per year. Oil and gas and geothermal activities are estimated at 14 acres per year. This disturbance would impact Visual Class III and IV lands with no acreage change in either visual class anticipated. Limiting ORV use to designated roads and trails would lessen the potential for surface disturbance. Minor impacts could occur from projects associated with HMP implementation inside and outside the livestock grazing area. All actions would be reviewed in site-specific EAs to consider impacts to visual resources and mitigation as needed so no significant impacts are anticipated.

Cultural Resources

BLM issuance of all nonmilitary land use authorizations and designation as lead agency for those land use authorizations on withdrawn and Army lands would result in a positive effect through direct control of any cultural resources encountered during the course of the projects authorized.

Under this alternative, having locatable mineral closures and designating 20,940 acres as vegetation sale areas would result in both positive and negative effects: positive in that damage to cultural resources would be avoided by the mineral closure and the vegetation sales would require cultural clearances and negative in that there would be no opportunity for clearances for mineral sales inventories. Vegetation sales would result in increased access and the increased potential for damage to cultural resources.

BLM's issuance of oil, gas, and geothermal leases, conducting salable materials disposal, developing watershed management plans, and prescribed burning, would result in positive effects by allowing BLM direct control of mitigation of impacts to cultural resources through required cultural clearances.

Public access for occasional controlled recreation uses would result in negative effects by increasing access and the potential for damage to cultural resources.

The establishment of the Sikes Act Stamp program on McGregor Range would result in a positive effect by increasing monies available for projects which in turn would result in increased cultural inventories.

The limitation of ORV use to designated roads and trails would result in a positive effect by minimizing vehicle damage to cultural resources and by reducing access to cultural sites.

Fencing and closing a portion of the Escondida Pueblo site (40 acres) to ORV use would result in positive effects by protecting the site from vehicular damage and by restricting access.

BLM issuance of research permits would allow direct control of cultural resource mitigation and data recovery. It would also result in increased accuracy of the BLM data base for use in analysis and protection.

In summary, negative impacts on cultural resources would not increase over the existing situation as a result of this alternative. Sufficient safeguards exist to ensure no adverse effects upon the resource as a result of BLM undertakings.

Social and Economic Conditions

Past confusion by the public over which agency, BLM or the Army, is in charge of land authorizations on the Range would be clarified under this alternative. The public would only need to contact the BLM under this alternative for any land use authorizations.

The continued closure of locatable minerals would be supported by some of the public because it would minimize the amount of visual scars on the land, and the effects of mining on wildlife. However, closing locatables would limit the amount of locatable minerals available to the area.

By issuing oil and gas, and geothermal leases on 100,000 acres of McGregor Range the available supply of these minerals to the area could be greater. The increase in mineral supply would be positively related to the number of leases issued and the amount of land authorized for mining. The leasing of these minerals and the disposal of salable materials on 287,360 acres would be opposed by some people because of the visual scars they may have.

If the entire 100,000 acres open for oil and gas leasing is leased at the rental rate of $3 per acre per year, the approximate income produced per year for BLM would be $300,000. If approximately 10,000 of those acres were leased for geothermal at the rental rate of $1 per year the total income would be approximately $10,000. Additional income from royalties may also be produced.

The designation of the vegetation study sites (3,910 acres) as ACECs is supported by the Nature Conservancy and others who want protection of these unique ecological sites to continue, along with continued monitoring and study. ACEC designation would highlight public and management interest in the special resource values of the sites.

Having vegetation sale areas is encouraged by people who would like to have more access to ornamental plants and cacti, and some grass seed. Other people are against vegetation sales in order to preserve native plant species.

Establishing a Sikes Act Stamp program on McGregor Range may be opposed by some hunters because of the extra cost of a license. The Sikes Act Stamp is supported by other people because of the extra income it would generate for habitat management and other wildlife improvements. The cost per hunter above a regular license would be $5.25. An estimated 460 people could possibly hunt on McGregor Range per year which would be approximately $2,400 in Sikes Act stamp money for wildlife habitat and research on the Range.

People who are against predator control would probably favor this alternative because BLM would have more command over predator control, which would require the elimination of predators to be evaluated thoroughly before any action was taken. Plus, this alternative would consider the protection of non-target species and public safety zones. There are people in favor of predator control who are likely to be against this alternative because it would slow down the control process due to the proposed analysis.

Allowing public hunts on the Range is supported by much of the public. Some would like expanded hunting seasons beyond the limited time periods proposed under this alternative.

CHAPTER 5

CONSULTATION AND COORDINATION

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INTRODUCTION

This chapter summarizes the consultation and coordination conducted in preparation of the Draft White Sands Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS) for McGregor Range. In the course of preparing this document, formal and informal efforts have been made to involve the public, other Federal agencies, and State and local Governments in the planning process. Several points of public involvement are mandated by regulations and were complied with, but numerous other actions were taken to further involve the public.

Prior to the actual writing of the document, an involved process of data gathering and other preparatory activities occurred. This process included inventory, public participation, interagency coordination, and preparation of a Management Situation Analysis (MSA). The MSA, as well as documentation of consultation and coordination efforts, are on file in the Las Cruces District Office. Consultation and coordination with agencies, organizations, and individuals occurred in a variety of ways throughout the planning process. A complete mailing list of those contacted throughout the planning process is also on file in the Las Cruces District Office.

The Draft White Sands RMPA/EIS was prepared by an interdisciplinary team of resource specialists from the Las Cruces District Resource Management Staff and White Sands Resource Area. Table 5-1 lists the names and qualifications of each team member.

PUBLIC PARTICIPATION

The planning process began in July 1987 with publication of a Notice of Intent to prepare a Resource Management Plan Amendment in the Federal Register (Volume 52, No. 145, Wednesday, July 29, 1987, page 28350).

On July 30, 1987, a scoping report was sent to approximately 800 individuals, State and Federal agencies, units of local Government, organizations, and members of private industry. The report summarized the single planning issue and management and resource concerns identified by BLM Managers and Resource Specialists. The public was asked to evaluate the issue and management concerns and to identify any significant concerns that should be addressed in the amendment. A postage-paid comment/response form was provided with the report for the convenience of those who wanted to respond. During the 30-day comment period that ended August 31, 1987, 17 letters were received by the District in response to the call for comment. The letters included 6 from individuals, 6 from organizations, 4 from Federal Government, and 1 from State Government. In response to the report, 65 individuals, groups, or agencies returned the comment form with official comments. Nineteen returned the form with no comment but indicated a desire to continue receiving material on the project. Five returned the form requesting that they be removed from the mailing list. A content analysis which includes numbers, types, and content of comments received during the scoping process was developed and is available for public review in the Las Cruces District Office.

In addition to sending the scoping report, the District held four public meetings. The public meetings were held August 18, 1987 at the BLM Las Cruces District Office; August 19, 1987 at City Hall in El Paso, Texas; August 20, 1987 in Timberon, New Mexico; and August 21, 1987 in Alamogordo, New Mexico. BLM personnel were available to explain the planning process and the single planning issue, and to discuss the concerns of those in attendance. A total of 80 people were in attendance at four meetings. In addition to the general public, the following special interest groups were represented: U.S. Army, Fort Bliss and Corps of Engineers; New Mexico Department of Game and Fish; Holloman Air Force Base; U.S. Forest Service; Gas Company of New Mexico; El Paso City Planning Department; El Paso Sierra Club; El Paso Audubon Society: Franklin Mountains Wilderness Coalition; and the Range Improvement Task Force. Six individuals submitted written comments during the meetings.

On September 29, 1987, a letter containing preliminary planning criteria for review by the public was sent to approximately 700 people. The planning criteria were available for a 30-day review and comment period ending October 30, 1987, before being approved for use in the planning process. Three comment letters were received during this period. The planning criteria that would be used in preparation of the White Sands RMPA/EIS were formally approved by the District Manager on November 12, 1987.

Other informal coordination with the public such as telephone calls and personal contacts have occurred in developing the White Sands RMPA/EIS. Records of these contacts are located in the Las Cruces District Office.

MILITARY INVOLVEMENT AND COORDINATION

The Military Lands Withdrawal Act of 1986, Public Law 99-606, withdrew McGregor Range for military purposes along with other military installations. Section 3 of the Act directs the Secretary of the Interior to manage the McGregor Range under the Federal Lands Policy and Management Act of 1976 and prepare a management plan by November 6, 1989. The plan is to be developed after consultation with the Secretary of the military department concerned (Fort Bliss Army Air Defense Center). Fort Bliss officials have indicated they will support BLM in meeting the November 1989 deadline. Section 12 of the Act required the Secretary of the Interior to determine, with concurrence of the Secretary of the military department, which public and acquired lands could be opened for operation of mining and mineral laws.

Consistent with the intent of the Act, the Las Cruces District staff has stayed in contact with Fort Bliss. Initially, the increased role of the BLM and the planning requirements were discussed on March 24, 1987 at the quarterly McGregor Coordination Meeting. In further communication with the McGregor Range Commander, BLM was informed that the U.S. Army Corps of Engineers, Albuquerque District, would be the Fort Bliss contact for planning coordination. On July 13, 1987, a meeting with the Corps of Engineers was held to review the Pre-planning Analysis prior to approval. Other coordination meetings were held on September 10, 1987; February 17, 1988; and March 25, 1988 to discuss military involvement in the planning process on use of lands on McGregor Range.

Fort Bliss officials reviewed and provided official comments on the Management Situation Analysis, formulation of alternatives, and Preliminary Draft RMPA/EIS. Informal reviews of various sections of this document as it was being written were conducted by the Ft. Bliss Staff and the Range Commander.

CONSULTATION

Consultation with the U.S. Fish and Wildlife Service (USFWS) is required before any project initiated or approved by the BLM is implemented that may affect any Federally threatened, endangered, or sensitive plant or animal or their habitat. This consultation is required by Section 7 of the Endangered Species Act of 1973. The White Sands RMPA/EIS is considered a major project and informal consultation was initiated with the USFWS on October 23, 1987. On October 28, 1987, the USFWS sent a list of the threatened or endangered species which may occur on McGregor Range. The Biological Assessment will be completed prior to issuing the Proposed Plan/Final EIS. The Biological Assessment and correspondence concerning the consultation process are on file in the Las Cruces District Office.

The New Mexico Department of Game and Fish (NMDGF) and the New Mexico Natural Resources Department have been contacted in regard to State listed threatened and endangered wildlife and plant species. This plan ammendment is consistent with legislation protecting State listed species. Coordination and consultation with the State will be continued throughout the planning process and during implementation.

The BLM cultural resource management program operates in accordance with 36 Code of Federal Regulations (CFR), Part 800, which provides specific procedures for consultation between BLM and the State Historic Preservation Officer (SHPO). Memorandum of Agreement (MOA) NMSO-168 between the SHPO, Advisory Council on Historic Preservation, and the BLM New Mexico State Office became effective October 19, 1982. This MOA coordinates the provisions of 36 CFR 800 with existing BLM procedures, emphasizing the BLM planning system. The MOA incorporates procedures

for exchanging information with the SHPO concerning cultural resources on public and private lands. It defines those undertakings and activities requiring or not requiring consultation and establishes reporting standards.

PUBLIC REVIEW OF THE DRAFT

In addition to members of the interested public, the Draft White Sands RMPA/EIS has been sent to and comments requested from:

Congressional Delegation and New Mexico State Legislators

U.S. Senator Jeff Bingaman
U.S. Senator Pete V. Domenici
U.S. Congressman Joe Skeen
State Senator, District 35
State Senator, District 39
State Senator, District 40
State Representative, District 51
State Representative, District 52
State Representative, District 53

New Mexico State Agencies

Department of Agriculture
- Ag. Programs and Resources Division

Bureau of Mines and Mineral Resources

Department of Finance and Administration
- Office of Cultural Affairs
  - Museum of New Mexico Division
  - Historic Preservation Division

Energy, Minerals and Natural Resources Department
- Forestry Division
- Oil Conservation Division
- Energy Conservation and Management Division
- Mining and Minerals Division
- Parks and Recreation Division
- Department of Game and Fish

Governor's Office

Health and Environment Department
- Environmental Improvement Division

Highway and Transportation Department

Human Services Department
- Office of Indian Affairs

Land Office
- Commissioner's Office

State Engineer/Interstate Stream Commission

Department of Public Safety
- State Police

Taxation and Revenue Department

Federal Agencies

Department of Agriculture
- Agricultural Research Service
- Jornada Experimental Range
- Agricultural Stabilization and Conservation Service
- Farmer's Home Administration
- Forest Service

Department of Commerce

Department of Defense
- Department of the Army
  - Corps of Engineers
  - Fort Bliss
  - McGregor Range
  - White Sands Missile Range

Department of Justice
- Immigration and Naturalization Service
  - Border Patrol

Department of the Interior
- Advisory Council on Historic Preservation
- Bureau of Indian Affairs
- Bureau of Mines
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- National Park Service
- Office of Environmental Project Review

Department of Transportation

Department of the Treasury
- Customs Service

Environmental Protection Agency

Federal Highway Administration

International Boundary and Water Commission

Local and Regional Governments, Agencies, and Indian Tribes

Chamber of Commerce (Alamogordo and El Paso)

Cities of Alamogordo and El Paso

El Paso County Commissioners

Mescalero Apache Tribe

Otero County Commissioners

Otero County Electric Coop, Inc.
Southeastern New Mexico Economic Development District
Village of Tularosa

Livestock Related Organizations

Las Cruces District Grazing Advisory Board
New Mexico Cattle Growers Association
New Mexico Farm and Livestock Bureau
New Mexico Wool Growers Association
Otero County Farm and Livestock Bureau
Society for Range Management
Southeastern New Mexico Grazing Association
Southwestern New Mexico Livestock Grazing Association

Conservation Organizations

Ada County Fish and Game League
Albuquerque Archaeological Society
Earth Environmental Consultants
Environmental Management Services Company
El Paso Archaeological Society
International Society Protection
Izaak Walton League
Mesilla Valley Audubon Society
Mesilla Valley Grotto
National Audubon Society
National Wildlife Federation
Natural Resources Defense Council
Nevada Outdoor Recreation Association
New Mexico Archaeological Society
New Mexico Conservation Coordinating Council
New Mexico Natural History Institute
New Mexico Wildlife Federation
New Mexico Wildlife Society
Oregon Environmental Council
Public Lands Council
Public Land Institute
Sierra Club
- Albuquerque Group
- El Paso Regional Group
- Rio Grande Chapter
- Southwestern New Mexico Group

Soil Conservation Society
Southwest Research and Information Center
Texas Archaeological Society
Wildlife Management Institute
Wilderness Society
Wildlife Society
- New Mexico Chapter

Mineral Related Organizations

Amoco Production Company
Atlantic Richfield Company
Champlin Petroleum Company
Consolidation Coal Company
El Paso Natural Gas Company
Gas Company of New Mexico
Homestake Mining Company
Hunt Energy Corporation
Mesa Petroleum
Minerals Exploration Coalition
Missing Link Mining Company
Molycorp
New Mexico Mining Association
New Mexico Oil and Gas Association
Noranda Exploration, Inc.
Review of New Energy Technology
Yates Petroleum Corporation

Other Organizations

Burn Construction Company, Inc.
El Paso Electric
El Paso Water Utilities Public Service Board
Envirospere Company
Federal Land Bank Association of Albuquerque
Federal Land Bank Association of Las Cruces
Federal Land Bank Association of Roswell
Las Cruces Production Credit Association
Western Land Exchanges

Other Groups

Albuquerque Jeep Herders, Inc.
American Motorcycle Association
Butterfield Trail 4x4 Club
Dona Ana Rockhound Club
El Paso 4x4 Club
Freewheel Cycle Club

Human Systems Research, Inc.
International Right-of-Way
Association of New Mexico
Jets Radio Club
Las Cruces District Advisory Council
New Mexico Motorcycle Dealers
Association
ORV use in New Mexico
Prairie Dawgs Motorcycle Club
Quivera Research Center
West Texas 4-Wheel Drive
Association, Inc.

Universities and Libraries

Alamogordo Public Library
El Paso Public Library
New Mexico Institute of Mining
Technology
New Mexico State Library
New Mexico State University
Library
Range Improvement Task Force
Thomas Branigan Memorial Library
University of New Mexico
University of Texas at El Paso

TABLE 5-1
LIST OF PREPARERS

Name	Responsibility	Education	Experience
Willis M. Bird, Jr.	Team Leader	B.A. Wildlife Management New Mexico State University	BLM 16 years Multi-Resources Staff Chief District Wildlife Biologist Resource Area Wildlife Biologist Recreation Technician
Bill Gilbert	Technical Coordinator	B.S. Biology University of Nebraska Humboldt State University	BLM 11 years Natural Resource Specialist
Roberta Avalos	Word Processing	International Business College Clerk-Typist Certificate Las Cruces, New Mexico	BLM 2 years Clerk-Typist Word Processor
Bernadine Creager	Lands/Access	Draughons Business College Albuquerque, New Mexico Fort Lewis College (Undergraduate Work) Durango, Colorado	BLM 14 years Realty Specialist/Secretary Private Industry 20 years Bookkeeper/Secretary
Maria Isabel Galvan	Cartographer	Las Cruces High School	BLM 5 years Cartographic Aid Clerk Planning Aid
Rena Gutierrez	Writer-Editor	B.A. Journalism/Mass Communications New Mexico State University	BLM 10 years Writer-Editor Clerk-Typist Public Information Aid
Mike Howard	Wildlife, Threatened and Endangered Plants and Animals	Assoc. in Science Central Texas College B.S. Range Animal Science M.S. Wildlife Management Sul Ross State University	BLM 9 years Wildlife Biologist Range Conservationist
Kelly Kirby	Social and Economic Conditions	B.A. Economics New Mexico State University	BLM 1 year Regional Economist
Susi Kolikant	Word Processing	B.A. English B.S. Secondary Education New Mexico State University	BLM 2 years Planning Clerk
Walter Lujan	Soil, Air, Water Vegetation Livestock Grazing	B.S. Range Management New Mexico State University	BLM 14 years Implementation Staff Supervisor Range Conservationist NM State Forestry 1 year Range Technician
Joseph P. Martin	Cultural Resources	B.A. History/Anthropology University of Arkansas M.A. Anthropology University of Idaho	BLM 1½ years Archeologist U.S. Forest Service 1 year Archeologist Private Contract Archaeology 9 years Archeologist/Historian
Joe H. Sanchez	Recreation, Wilderness, Visual Resources	B.S. Range Science New Mexico State University	BLM 8 years Surface Reclamation Specialist Natural Resource Specialist 2 years U.S. Forest Service Range Conservationist Soil Conservation Service 3 years Soil Conservationist
Joseph I. Torrez	Geology and Minerals	B.A. Geology New Mexico Highlands University	BLM 11 years Geologist NM State Highway Department 5 years Soils Testing/Surveying Sales 1 year
Dusty Voss	Fire Management	3 years Range and Animal Science Conners State College	BLM 12 years Forest Service 8 years Fire Management

TABLE 5-1 (Concluded)
LIST OF PREPARERS

Contributors and Reviewers

Las Cruces District

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Tom Custer, Geologist
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Ken Holmes, District Wildlife Biologist
Juan Padilla, District Realty Specialist
Pam Smith, District Archeologist
Richard T. Watts, ADM, Operations

U. S. Army

LTC Anthony Laspada, Ft. Bliss
Pete Atkins, Ft. Bliss
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New Mexico State Office

Ron Bartel, Petroleum Engineer
Phil Beck, Realty Specialist
Bernie Chavez, Soil, Water, and Air Specialist
Andy Dimas, Wildlife Biologist
Gary Dreier, Range Specialist
Luann Jacobsen, Archeologist
Bill Jonas, Geologist
Don Hinrichsen, Outdoor Recreation Planner
Jon Joseph, Wilderness Specialist
Jan Knight, Botanist
Max Ogg, Chief, Branch Engineering and Support Services
Chuck Pettee, Hydrologist
Ted Rael, Realty Specialist
Carl St. Clair, Fire Management Specialist
Tim Sanders, Environmental Coordinator
J. W. Whitney, Natural Resource Specialist

APPENDICES

APPENDIX A

MILITARY LANDS WITHDRAWAL ACT

Public Law 99-606
99th Congress

An Act

To withdraw certain public lands for military purposes, and for other purposes.

Nov. 6, 1986
[H.R. 1790]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. WITHDRAWALS.

Defense and national security
Mines and mining

(a) BRAVO-20 BOMBING RANGE.—(1) Subject to valid existing rights and except as otherwise provided in this Act, the lands referred to in paragraph (2) of this subsection, and all other areas within the boundary of such lands as depicted on the map specified in such paragraph which may become subject to the operation of the public land laws, are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing and the geothermal leasing laws). Such lands are reserved for use by the Secretary of the Navy for—

(A) testing and training for aerial bombing, missile firing, and tactical maneuvering and air support; and

(B) subject to the requirements of section 3(f), other defense-related purposes consistent with the purposes specified in this paragraph.

Nevada

(2) The lands referred to in paragraph (1) of this subsection are the public lands comprising approximately 21,576.40 acres in Churchill County, Nevada, as generally depicted on the map entitled "Bravo-20 Bombing Range Withdrawal—Proposed", dated April 1986, and filed in accordance with section 2.

Flood control

(3) This section does not affect the withdrawals of July 2, 1902, August 26, 1902, and August 4, 1904, under which the Bureau of Reclamation utilizes for flooding, overflow, and seepage purposes approximately 14,750 acres of the lands withdrawn and reserved by this subsection.

(b) NELLIS AIR FORCE RANGE.—(1) Subject to valid existing rights and except as otherwise provided in this Act, the public lands described in paragraph (2) of this subsection are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing and the geothermal leasing laws). Such lands are reserved for use by the Secretary of the Air Force—

(A) as an armament and high-hazard testing area;

(B) for training for aerial gunnery, rocketry, electronic warfare, and tactical maneuvering and air support; and

(C) subject to the requirements of section 3(f), for other defense-related purposes consistent with the purposes specified in this paragraph.

Nevada

(2) The lands referred to in paragraph (1) of this subsection are the lands comprising approximately 2,945,000 acres of land in Clark, Nye, and Lincoln Counties, Nevada, as generally depicted on the map entitled "Nellis Air Force Range Withdrawal—Proposed", dated January 1985, and filed in accordance with section 2.

(c) BARRY M. GOLDWATER AIR FORCE RANGE.—(1) Subject to valid existing rights and except as otherwise provided in this Act, the lands described in paragraph (2) of this subsection are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing and the geothermal leasing laws). Such lands are reserved for use by the Secretary of the Air Force for—

(A) an armament and high-hazard testing area;

(B) training for aerial gunnery, rocketry, electronic warfare, and tactical maneuvering and air support; and

(C) subject to the requirements of section 3(f), other defense-related purposes consistent with the purposes specified in this paragraph.

Arizona

(2) The lands referred to in paragraph (1) of this subsection are the lands comprising approximately 2,664,423 acres in Maricopa, Pima, and Yuma Counties, Arizona, as generally depicted on the map entitled "Luke Air Force Range Withdrawal—Proposed", dated January 1985, and filed in accordance with section 2.

(d) MCGREGOR RANGE.—(1) Subject to valid existing rights and except as otherwise provided in this Act, the public lands described in paragraph (2) of this subsection are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing and the geothermal leasing laws). Such lands are reserved for use by the Secretary of the Army—

(A) for training and weapons testing; and

(B) subject to the requirements of section 3(f), for other defense-related purposes consistent with the purposes specified in this paragraph.

New Mexico

(2) The lands referred to in paragraph (1) of this subsection are the lands comprising approximately 608,384.87 acres in Otero County, New Mexico, as generally depicted on the map entitled "McGregor Range Withdrawal—Proposed", dated January 1985, and filed in accordance with section 2.

(3) Any of the public lands withdrawn under paragraph (1) of this subsection which, as of the date of enactment of this Act, are managed pursuant to section 603 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782) shall continue to be managed under that section until Congress determines otherwise.

Alaska

(e) FORT GREELY MANEUVER AREA AND FORT GREELY AIR DROP ZONE.—(1) Subject to valid existing rights and except as otherwise provided in this Act, the lands described in paragraph (2) of this subsection are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing and the geothermal leasing laws), under an Act entitled "An Act to provide for the admission of the State of Alaska into the Union", approved July 7, 1958 (48 U.S.C. note prec. 21), and under the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.). Such lands are reserved for use by the Secretary of the Army for—

(A) military maneuvering, training, and equipment development and testing; and

(B) subject to the requirements of section 3(f), other defense-related purposes consistent with the purposes specified in this paragraph.

(2) The lands referred to in paragraph (1) of this subsection are—

(A) the lands comprising approximately 571,995 acres in the Big Delta Area, Alaska, as generally depicted on the map entitled "Fort Greely Maneuver Area Withdrawal—Proposed", dated January 1985, and filed in accordance with section 2; and

(B) the lands comprising approximately 51,590 acres in the Granite Creek Area, Alaska, as generally depicted on the map entitled "Fort Greely, Air Drop Zone Withdrawal—Proposed", dated January 1985, and filed in accordance with section 2.

(f) FORT WAINWRIGHT MANEUVER AREA.—(1) Subject to valid existing rights and except as otherwise provided in this Act, the public lands described in paragraph (2) of this subsection are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing and the geothermal leasing laws), under an Act entitled "An Act to provide for the admission of the State of Alaska into the Union", approved July 7, 1958 (48 U.S.C. note prec. 21), and under the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.). Such lands are reserved for use by the Secretary of the Army for— Alaska.

(A) military maneuvering;

(B) training for artillery firing, aerial gunnery, and infantry tactics; and

(C) subject to the requirements of section 3(f), other defense-related purposes consistent with the purposes specified in this paragraph.

(2) The lands referred to in paragraph (1) of this subsection are the lands comprising approximately 247,951.67 acres of land in the Fourth Judicial District, Alaska, as generally depicted on the map entitled "Fort Wainwright Maneuver Area Withdrawal—Proposed", dated January 1985, and filed in accordance with section 2.

SEC. 2. MAPS AND LEGAL DESCRIPTIONS.

(a) PUBLICATION AND FILING REQUIREMENT.—As soon as practicable after the date of enactment of this Act, the Secretary of the Interior shall—

(1) publish in the Federal Register a notice containing the legal description of the lands withdrawn and reserved by this Act; and Federal Register, publication

(2) file maps and the legal description of the lands withdrawn and reserved by this Act with the Committee on Energy and Natural Resources of the United States Senate and with the Committee on Interior and Insular Affairs of the United States House of Representatives.

(b) TECHNICAL CORRECTIONS.—Such maps and legal descriptions shall have the same force and effect as if they were included in this Act except that the Secretary of the Interior may correct clerical and typographical errors in such maps and legal descriptions.

(c) AVAILABILITY FOR PUBLIC INSPECTION.—Copies of such maps and legal descriptions shall be available for public inspection in the offices of the Director and appropriate State Directors of the Bureau of Land Management; the office of the commander, Bravo-20 Bombing Range; the offices of the Director and appropriate Regional Directors of the United States Fish and Wildlife Service; the office of the commander, Nellis Air Force Base; the office of the commander, Barry M. Goldwater Air Force Base; the office of the commander, McGregor Range; the office of the installation commander, Fort Richardson, Alaska; the office of the commander, Marine Corps Air Station, Yuma, Arizona; and the office of the Secretary of Defense. Alaska Arizona

(d) REIMBURSEMENT.—The Secretary of Defense shall reimburse the Secretary of the Interior for the cost of implementing this section.

SEC. 3. MANAGEMENT OF WITHDRAWN LANDS.

National Wildlife Refuge System.

(a) MANAGEMENT BY THE SECRETARY OF THE INTERIOR.—(1) During the period of the withdrawal, the Secretary of the Interior shall manage the lands withdrawn under section 1 (except those lands within a unit of the National Wildlife Refuge System) pursuant to the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) and other applicable law, including the Recreation Use of Wildlife Areas Act of 1962 (16 U.S.C. 460k et seq.), and this Act. Lands within the Desert National Wildlife Range and the Cabeza Prieta National Wildlife Refuge shall be managed pursuant to the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd et seq.) and other applicable law. No provision of this Act, except sections 4, 11, and 12, shall apply to the management of the Desert National Wildlife Range or the Cabeza Prieta National Wildlife Refuge.

(2) To the extent consistent with applicable law and Executive orders, the lands withdrawn under section 1 may be managed in a manner permitting—

(A) the continuation of grazing pursuant to applicable law and Executive orders where permitted on the date of enactment of this Act;

(B) protection of wildlife and wildlife habitat;

(C) control of predatory and other animals;

(D) recreation; and

(E) the prevention and appropriate suppression of brush and range fires resulting from nonmilitary activities.

(3)(A) All nonmilitary use of such lands, other than the uses described in paragraph (2), shall be subject to such conditions and restrictions as may be necessary to permit the military use of such lands for the purposes specified in or authorized pursuant to this Act.

(B) The Secretary of the Interior may issue any lease, easement, right-of-way, or other authorization with respect to the nonmilitary use of such land only with the concurrence of the Secretary of the military department concerned.

Safety
Defense and national security

(b) CLOSURE TO PUBLIC.—(1) If the Secretary of the military department concerned determines that military operations, public safety, or national security require the closure to public use of any road, trail, or other portion of the lands withdrawn by this Act, the Secretary may take such action as the Secretary determines necessary or desirable to effect and maintain such closure.

(2) Any such closure shall be limited to the minimum areas and periods which the Secretary of the military department concerned determines are required to carry out this subsection.

(3) Before and during any closure under this subsection, the Secretary of the military department concerned shall—

(A) keep appropriate warning notices posted; and

(B) take appropriate steps to notify the public concerning such closures.

(c) MANAGEMENT PLAN.—The Secretary of the Interior (after consultation with the Secretary of the military department concerned) shall develop a plan for the management of each area withdrawn

under section 1 during the period of such withdrawal. Each plan shall—

(1) be consistent with applicable law;

(2) be subject to conditions and restrictions specified in subsection (a)(3) of this section;

(3) include such provisions as may be necessary for proper management and protection of the resources and values of such areas; and

(4) be developed not later than three years after the date of enactment of this Act.

(d) BRUSH AND RANGE FIRES.—The Secretary of the military department concerned shall take necessary precautions to prevent and suppress brush and range fires occurring within and outside the lands withdrawn under section 1 as a result of military activities and may seek assistance from the Bureau of Land Management in the suppression of such fires. The memorandum of understanding required by subsection (e) shall provide for Bureau of Land Management assistance in the suppression of such fires, and for a transfer of funds from the Department of the Navy, Army, or Air Force, as appropriate, to the Bureau of Land Management as compensation for such assistance.

(e) MEMORANDUM OF UNDERSTANDING.—(1) The Secretary of the Interior and the Secretary of the military department concerned shall (with respect to each land withdrawal under section 1) enter into a memorandum of understanding to implement the management plan developed under subsection (c). Any such memorandum of understanding shall provide that the Director of the Bureau of Land Management shall provide assistance in the suppression of fires resulting from the military use of lands withdrawn under section 1 if requested by the Secretary of the military department concerned.

(2) The duration of any such memorandum shall be the same as the period of the withdrawal of the lands under section 1.

(f) ADDITIONAL MILITARY USES.—(1) Lands withdrawn by section 1 (except those within the Desert National Wildlife Range or within the Cabeza Prieta National Wildlife Refuge) may be used for defense-related uses other than those specified in such section. The Secretary of Defense shall promptly notify the Secretary of the Interior in the event that the lands withdrawn by this Act will be used for defense-related purposes other than those specified in section 1. Such notification shall indicate the additional use or uses involved, the proposed duration of such uses, and the extent to which such additional military uses of the withdrawn lands will require that additional or more stringent conditions or restrictions be imposed on otherwise-permitted nonmilitary uses of the withdrawn land or portions thereof.

SEC. 4. SPECIAL WILDLIFE RULES.

(a) NELLIS AIR FORCE RANGE.—(1) Neither the withdrawal under section 1(b) nor any other provision of this Act shall be construed to amend—

(A) the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd et seq.) or any other law related to management of the National Wildlife Refuge System; or

(B) any Executive order or public land order in effect on the date of enactment of this Act with respect to the Desert National Wildlife Refuge.

(2) Neither the withdrawal under section 1(b) nor any other provision of this Act shall be construed to amend any memorandum of understanding between the Secretary of the Interior and the Secretary of the Air Force regarding the administration and joint use of a portion of the Desert National Wildlife Range. The provisions of the memorandum of understanding between the Secretary of the Interior and the Department of the Air Force regarding Air Force operations on the Desert National Wildlife Range in effect on March 15, 1986, shall not be amended sooner than 90 days after the Secretary of the Interior has notified the Committee on Interior and Insular Affairs of the House of Representatives, the Committee on Energy and Natural Resources of the Senate, the Committees on Armed Services of the Senate and the House of Representatives, the Committee on Merchant Marine and Fisheries of the House of Representatives, and the Committee on Environment and Public Works of the Senate of any proposed amendments to such provisions.

(b) BARRY M. GOLDWATER AIR FORCE RANGE.—(1) Neither the withdrawal under section 1(c) nor any other provision of this Act shall be construed to amend—

(A) the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd et seq.) or any other law related to management of the National Wildlife Refuge System; or

(B) any Executive order or public land order in effect on the date of enactment of this Act with respect to the Cabeza Prieta National Wildlife Refuge.

(2) Neither the withdrawal under section 1(c) nor any other provision of this Act shall be construed to amend any memorandum of understanding between the Secretary of the Interior and the Secretary of the Air Force regarding the administration and joint use of a portion of the Cabeza Prieta National Wildlife Refuge. The provisions of the memorandum of understanding between the Secretary of the Interior and the Department of the Air Force regarding Air Force operations on the Cabeza Prieta National Wildlife Refuge in effect on March 24, 1975, shall not be amended sooner than 90 days after the Secretary of the Interior has notified the Committee on Interior and Insular Affairs of the House of Representatives, the Committee on Energy and Natural Resources of the Senate, the Committees on Armed Services of the Senate and the House of Representatives, the Committee on Merchant Marine and Fisheries of the House of Representatives, and the Committee on Environment and Public Works of the Senate of any proposed amendments to such provisions.

SEC. 5. DURATION OF WITHDRAWALS.

(a) DURATION.—The withdrawal and reservation established by this Act shall terminate 15 years after the date of enactment of this Act.

(b) DRAFT ENVIRONMENTAL IMPACT STATEMENT.—(1) No later than 12 years after the date of enactment of this Act, the Secretary of the military department concerned shall publish a draft environmental impact statement concerning continued or renewed withdrawal of any portion of the lands withdrawn by this Act for which that Secretary intends to seek such continued or renewed withdrawal. Such draft environmental impact statement shall be consistent with the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) applicable to such a draft environmental

impact statement. Prior to the termination date specified in subsection (a), the Secretary of the military department concerned shall hold a public hearing on any draft environmental impact statement published pursuant to this subsection. Such hearing shall be held in the affected State or States in order to receive public comments on the alternatives and other matters included in such draft environmental impact statement.

(2)(A) For purposes of such draft environmental impact statement published by the Secretary of the Navy, the term "lands withdrawn by this Act" shall be deemed to include lands withdrawn by public land orders 275, 788, 898, and 2635 and lands proposed for withdrawal as specified in the draft environmental impact statement for the proposed master land withdrawal, Naval Air Station, Fallon, Nevada. Nevada.

(B) For purposes of this subsection, lands withdrawn by section 1(b) shall be deemed to include lands withdrawn by Public Law 98-485. 98 Stat. 2261

(c) EXTENSIONS OR RENEWALS.—The withdrawals established by this Act may not be extended or renewed except by an Act or joint resolution.

SEC. 6. NEVADA REPORT.

(a) SPECIAL NEVADA REPORT.—No later than five years after the date of enactment of this Act, the Secretary of the Air Force, the Secretary of the Navy, and the Secretary of the Interior shall submit to Congress a joint report. In addition to the other matters required by this section, the report shall include an analysis and an evaluation of the effects on public health and safety throughout Nevada of— Health and medical care Safety

(1) the operation of aircraft at subsonic and supersonic speeds;

(2) the use of aerial and other gunnery, rockets, and missiles; and

(3) the uses specified in section 1.

(b) EVALUATION OF CUMULATIVE EFFECTS OF CONTINUED OR RENEWED WITHDRAWAL.—Each of the military departments concerned and the Secretary of the Interior shall, in the report required by this section, evaluate the cumulative effects of continued or renewed withdrawal for military purposes of the military department concerned of some or all of the lands withdrawn by sections 1(a) and 1(b) on the environment and population of Nevada. In performing this evaluation, there shall be considered—

(1) the actual and proposed withdrawal for military and related purposes of other lands in Nevada, including (but not limited to)—

(A) lands withdrawn by sections 1(a) and 1(b) of this Act and by Public Law 98-485 (98 Stat. 2261);

(B) lands withdrawn by Public Land Orders 275, 788, 898, and 2635;

(C) lands proposed for withdrawal as specified in the draft environmental impact statement for the proposed master land withdrawal, Naval Air Station, Fallon, Nevada; and

(D) lands withdrawn or being considered for withdrawal for use by the Department of Energy; and

(2) the cumulative impacts on public and private property in Nevada and on the fish and wildlife, cultural, historic, scientific, recreational, wilderness, and other values of the public lands of Nevada resulting from military and defense related uses of the Real property Defense and national security

lands withdrawn by sections 1(a) and 1(b) and the other lands described in paragraph (1) of this subsection.

(c) MITIGATION MEASURES.—The report required by this subsection shall include an analysis and an evaluation of possible measures to mitigate the cumulative effect of the withdrawal of public lands in Nevada for military and defense-related purposes, and of use of the airspaces over public lands in Nevada for such purposes, on people and property in Nevada and the fish and wildlife, cultural, historic, scientific, wilderness, and other resources and values of the public lands in Nevada (including recreation, mineral development, and agriculture).

SEC. 7. ONGOING DECONTAMINATION.

(a) PROGRAM.—Throughout the duration of the withdrawals made by this Act, the Secretary of the military department concerned, to the extent funds are made available, shall maintain a program of decontamination of lands withdrawn by this Act at least at the level of cleanup achieved on such lands in fiscal year 1986.

President of U S (b) REPORTS.—At the same time as the President transmits to the Congress the President's proposed budget for the first fiscal year beginning after the date of enactment of this Act and for each subsequent fiscal year, each such Secretary shall transmit to the Committees on Appropriations, Armed Services, and Energy and Natural Resources of the Senate and to the Committees on Appropriations, Armed Services, and Interior and Insular Affairs of the House of Representatives a description of the decontamination efforts undertaken during the previous fiscal year on such lands and the decontamination activities proposed for such lands during the next fiscal year including:

(1) amounts appropriated and obligated or expended for decontamination of such lands;

(2) the methods used to decontaminate such lands;

(3) amount and types of contaminants removed from such lands;

(4) estimated types and amounts of residual contamination on such lands; and

(5) an estimate of the costs for full decontamination of such lands and the estimate of the time to complete such decontamination.

SEC. 8. REQUIREMENTS FOR RENEWAL.

(a) NOTICE AND FILING.—(1) No later than three years prior to the termination of the withdrawal and reservation established by this Act, the Secretary of the military department concerned shall advise the Secretary of the Interior as to whether or not the Secretary of the military department concerned will have a continuing military need for any of the lands withdrawn under section 1 after the termination date of such withdrawal and reservation.

(2) If the Secretary of the military department concerned concludes that there will be a continuing military need for any of such lands after the termination date, that Secretary shall file an application for extension of the withdrawal and reservation of such needed lands in accordance with the regulations and procedures of the Department of the Interior applicable to the extension of withdrawals of lands for military uses.

(3) If, during the period of withdrawal and reservation, the Secretary of the military department concerned decides to relinquish

all or any of the lands withdrawn and reserved by this Act, such Secretary shall file a notice of intention to relinquish with the Secretary of the Interior.

(b) CONTAMINATION.—(1) Before transmitting a notice of intention to relinquish pursuant to subsection (a), the Secretary of Defense, acting through the military department concerned, shall prepare a written determination concerning whether and to what extent the lands that are to be relinquished are contaminated with explosive, toxic, or other hazardous materials. Hazardous materials.

(2) A copy of such determination shall be transmitted with the notice of intention to relinquish.

(3) Copies of both the notice of intention to relinquish and the determination concerning the contaminated state of the lands shall be published in the Federal Register by the Secretary of the Interior. Federal Register, publication

(c) DECONTAMINATION.—If any land which is the subject of a notice of intention to relinquish pursuant to subsection (a) is contaminated, and the Secretary of the Interior, in consultation with the Secretary of the military department concerned, determines that decontamination is practicable and economically feasible (taking into consideration the potential future use and value of the land) and that upon decontamination, the land could be opened to operation of some or all of the public land laws, including the mining laws, the Secretary of the military department concerned shall decontaminate the land to the extent that funds are appropriated for such purpose.

(d) ALTERNATIVES.—If the Secretary of the Interior, after consultation with the Secretary of the military department concerned, concludes that decontamination of any land which is the subject of a notice of intention to relinquish pursuant to subsection (a) is not practicable or economically feasible, or that the land cannot be decontaminated sufficiently to be opened to operation of some or all of the public land laws, or if Congress does not appropriate a sufficient amount of funds for the decontamination of such land, the Secretary of the Interior shall not be required to accept the land proposed for relinquishment.

(e) STATUS OF CONTAMINATED LANDS.—If, because of their contaminated state, the Secretary of the Interior declines to accept jurisdiction over lands withdrawn by this Act which have been proposed for relinquishment, or if at the expiration of the withdrawal made by this Act the Secretary of the Interior determines that some of the lands withdrawn by this Act are contaminated to an extent which prevents opening such contaminated lands to operation of the public land laws—

(1) the Secretary of the military department concerned shall take appropriate steps to warn the public of the contaminated state of such lands and any risks associated with entry onto such lands; Public information

(2) after the expiration of the withdrawal, the Secretary of the military department concerned shall undertake no activities on such lands except in connection with decontamination of such lands; and

(3) the Secretary of the military department concerned shall report to the Secretary of the Interior and to the Congress concerning the status of such lands and all actions taken in furtherance of this subsection. Reports

(f) REVOCATION AUTHORITY.—Notwithstanding any other provisions of law, the Secretary of the Interior, upon deciding that it is in

the public interest to accept jurisdiction over lands proposed for relinquishment pursuant to subsection (a), is authorized to revoke the withdrawal and reservation established by this Act as it applies to such lands. Should the decision be made to revoke the withdrawal and reservation, the Secretary of the Interior shall publish in the Federal Register an appropriate order which shall— Federal Register, publication.

(1) terminate the withdrawal and reservation;

(2) constitute official acceptance of full jurisdiction over the lands by the Secretary of the Interior; and

(3) state the date upon which the lands will be opened to the operation of some or all of the public lands laws, including the mining laws. Mines and mining

SEC. 9. DELEGABILITY.

(a) DEFENSE.—The functions of the Secretary of Defense or of a military department under this title may be delegated.

(b) INTERIOR.—The functions of the Secretary of the Interior under this title may be delegated, except that an order described in section 7(f) may be approved and signed only by the Secretary of the Interior, the Under Secretary of the Interior, or an Assistant Secretary of the Department of the Interior.

SEC. 10. WATER RIGHTS.

Nothing in this Act shall be construed to establish a reservation to the United States with respect to any water or water right on the lands described in section 1 of this Act. No provision of this Act shall be construed as authorizing the appropriation of water on lands described in section 1 of this Act by the United States after the date of enactment of this Act except in accordance with the law of the relevant State in which lands described in section 1 are located. This section shall not be construed to affect water rights acquired by the United States before the date of enactment of this Act.

SEC. 11. HUNTING, FISHING, AND TRAPPING. National Wildlife Refuge System

All hunting, fishing, and trapping on the lands withdrawn by this Act shall be conducted in accordance with the provisions of section 2671 of title 10, United States Code, except that hunting, fishing, and trapping within the Desert National Wildlife Range and the Cabeza Prieta National Wildlife Refuge shall be conducted in accordance with the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd et seq.), the Recreation Use of Wildlife Areas Act of 1962 (16 U.S.C. 460k et seq.), and other laws applicable to the National Wildlife Refuge System.

SEC. 12. MINING AND MINERAL LEASING.

(a) DETERMINATION OF LANDS SUITABLE FOR OPENING.—As soon as possible after the enactment of this Act and at least every five years thereafter, the Secretary of the Interior shall determine, with the concurrence of the Secretary of the military department concerned, which public and acquired lands (except as provided in this subsection) described in subsections (a), (b), (d), (e), and (f) of section 1 of this Act the Secretary of the Interior considers suitable for opening to the operation of the Mining Law of 1872, the Mineral Lands Leasing Act of 1920, as amended, the Mineral Leasing Act for Acquired Lands of 1947, the Geothermal Steam Act of 1970, or any one or more of such Acts. The Secretary of the Interior shall publish a notice in the Federal Register listing the lands determined suit- Federal Register publication. 17 Stat. 91. 30 USC 181. 30 USC 351 note. 1001 note. Federal Register publication. National Wildlife Refuge System.

able pursuant to this section and specifying the opening date, except that lands contained within the Desert National Wildlife Range in Nevada or within the Cabeza Prieta National Wildlife Refuge in Arizona shall not be determined to be suitable for opening pursuant to this section.

(b) OPENING LANDS.—On the day specified by the Secretary of the Interior in a notice published in the Federal Register pursuant to subsection (a), the land identified under subsection (a) as suitable for opening to the operation of one or more of the laws specified in subsection (a) shall automatically be open to the operation of such laws without the necessity for further action by either the Secretary or the Congress.

Federal Register, publication.

(c) EXCEPTION FOR COMMON VARIETIES.—No deposit of minerals or materials of the types identified by section 3 of the Act of July 23, 1955 (69 Stat. 367), whether or not included in the term "common varieties" in that Act, shall be subject to location under the Mining Law of 1872 on lands described in section 1.

30 USC 611

17 Stat. 91

(d) REGULATIONS.—The Secretary of the Interior, with the advice and concurrence of the Secretary of the military department concerned shall promulgate such regulations to implement this section as may be necessary to assure safe, uninterrupted, and unimpeded use of the lands described in section 1 for military purposes. Such regulations shall also contain guidelines to assist mining claimants in determining how much, if any, of the surface of any lands opened pursuant to this section may be used for purposes incident to mining.

(e) CLOSURE OF MINING LANDS.—In the event of a national emergency or for purposes of national defense or security, the Secretary of the Interior, at the request of the Secretary of the military department concerned, shall close any lands that have been opened to mining or to mineral or geothermal leasing pursuant to this section.

Defense and national security.

(f) LAWS GOVERNING MINING ON LANDS WITHDRAWN UNDER THIS ACT.—(1) Except as otherwise provided in this Act, mining claims located pursuant to this Act shall be subject to the provisions of the mining laws. In the event of a conflict between those laws and this Act, this Act shall prevail.

(2) All mining claims located under the terms of this Act shall be subject to the provisions of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.).

(g) PATENTS.—(1) Patents issued pursuant to this Act for locatable minerals shall convey title to locatable minerals only, together with the right to use so much of the surface as may be necessary for purposes incident to mining under the guidelines for such use established by the Secretary of the Interior by regulation.

(2) All such patents shall contain a reservation to the United States of the surface of all lands patented and of all nonlocatable minerals on those lands.

(3) For the purposes of this section, all minerals subject to location under the Mining Law of 1872 are referred to as "locatable minerals".

(h) REVOCATION.—Notwithstanding any other provision of law, the Secretary of the Interior, if the Secretary determines it necessary and appropriate for the purpose of consummating an exchange of lands or interests therein under applicable law, is hereby authorized and directed to revoke the Small Tract Act Classification S T 049794 in Clark County, Nevada.

Nevada.

SEC. 13. IMMUNITY OF UNITED STATES.

The United States and all departments or agencies thereof shall be held harmless and shall not be liable for any injuries or damages to persons or property suffered in the course of any mining or mineral or geothermal leasing activity conducted on lands described in section 1 of this Act.

Military Lands Withdrawal Act of 1986.

SEC. 14. SHORT TITLE.

Sections 1 through 15 of this Act may be cited as the "Military Lands Withdrawal Act of 1986".

SEC. 15. REDESIGNATION.

Arizona.

The Luke Air Force Range in Arizona is hereby redesignated as the "Barry M. Goldwater Air Force Range". Any reference in any law, regulation, document, record, map, or other paper of the United States to the Luke Air Force Range shall be deemed to be a reference to the "Barry M. Goldwater Air Force Range".

16 USC 460ff-1

SEC. 16. BOUNDARY ADJUSTMENT TO CUYAHOGA VALLEY NATIONAL RECREATION AREA.

Section 2 of the Act entitled "An Act to provide for the establishment of the Cuyahoga Valley National Recreational Recreation Area", approved December 27, 1974 (16 U.S.C. 460ff et seq.), is amended as follows:

(1) In subsection (a), strike out "numbered 655-90,001-A and dated May 1978" and insert "numbered 644-80,054 and dated July 1986".

(2) At the end of subsection (a), insert the following:

"The recreation area shall also comprise any lands designated as 'City of Akron Lands' on the map referred to in the first sentence which are offered as donations to the Department of the Interior or which become privately owned. The Secretary shall revise such map to depict such lands as part of the recreation area.".

(3) In subsection (b), after the first sentence, insert the following:

State and local governments.

"The Secretary may not acquire fee title to any lands included within the recreation area in 1986 which are designated on the map referred to in subsection (a) as 'Scenic Easement Acquisition Areas'. The Secretary may acquire only scenic easements in such designated lands. Unless consented to by the owner from which the easement is acquired, any such scenic easement may not prohibit

any activity, the subdivision of any land, or the construction of any building or other facility if such activity, subdivision, or construction would have been permitted under laws and ordinances of the unit of local government in which such land was located on April 1, 1986, as such laws and ordinances were in effect on such date.".

Approved November 6, 1986.

LEGISLATIVE HISTORY—H.R. 1790:

CONGRESSIONAL RECORD, Vol. 132 (1986):
Oct. 17, considered and passed House.
Oct. 18, considered and passed Senate.

APPENDIX B

PREVIOUS DECISIONS

APPENDIX B

SUMMARY OF PREVIOUS DECISIONS

This appendix provides a summary of the previous decisions for McGregor Range from the 1986 White Sands Resource Management Plan (RMP) which have been evaluated and brought forward and incorporated into this RMP Amendment. Their incorporation into this RMP Amendment was either through continuing management guidance or through the issue/concerns. The previous decisions and how they were incorporated into this document are shown below.

RESOURCE	DECISION NUMBER	DECISION	INCORPORATION: CONTINUING MANAGEMENT GUIDANCE	INCORPORATION: ISSUE/ CONCERN
LANDS	L-3	Land tenure adjustment: Acquisition of the State land on McGregor Range (920 acres) would enhance overall consolidation of public land. (The legal descriptions for the two parcels are N½, N½SW¼, SW¼SW¼, SE¼, Section 2, T. 21 S., R. 10 E., NMPM, containing 600 acres; and W½, Section 16, T. 22 S., R. 12 E., NMPM containing 320 acres.)	X	
MINERALS	LM-1	Withdrawn lands: McGregor Range was withdrawn from all forms of appropriation under the public land laws, including the mining and mineral leasing laws, in 1957.		X
SOILS AND WATER RESOURCES	W-6	Limit ORV use to existing roads and trails north of State Road 506 (116,000 acres) for protection of watershed resources.		X
LIVESTOCK	McG-1	No more than 50 percent of key forage species will be utilized each year by all grazing animals.	X	
LIVESTOCK	McG-2	The right to use livestock forage in a given pasture will continue to be determined by competitive bidding at public auction.	X	
LIVESTOCK	McG-3	The livestock grazing season will continue to be from October 1 to June 30 (subject to the discretion of the BLM Area Manager).	X	
LIVESTOCK	McG-4	Livestock grazing will continue to be limited to cattle and three horses per pasture.	X	

APPENDIX B (CONTINUED)
SUMMARY OF PREVIOUS DECISIONS

RESOURCE	DECISION NUMBER	DECISION	INCORPORATION CONTINUING MANAGEMENT GUIDANCE	INCORPORATION ISSUE/ CONCERN
LIVESTOCK	McG-5	Seventeen and one-half miles of existing pipelines will be replaced.	X	
LIVESTOCK	McG-6	Thirty-eight and one-half miles of new pipelines will be constructed.	X	
LIVESTOCK	McG-7	Nineteen wells, seventy-seven water troughs, thirty-nine water storage tanks, and five dirt tanks will be constructed.	X	
LIVESTOCK	McG-8	Three corrals will be constructed.	X	
LIVESTOCK	McG-9	Forty-seven and three-fourths miles of unimproved roads will be constructed, to provide access to water facilities. The roads will be suitable for fair weather travel by conventional vehicles.	X	
LIVESTOCK	McG-10	As at present, water for wildlife will be provided year-round in each pasture.	X	
LIVESTOCK	McG-11	As at present, no grazing will be allowed on 244,000 acres of the Co-use area.	X	
LIVESTOCK	McG-12	BLM will continue to maintain and repair all grazing-related facilities, except that lessees will be responsible for maintenance of boundary fences and gates during the grazing season.	X	
LIVESTOCK	McG-13	Lessees will be required to place salt and protein supplements at least 0.5 miles from water.	X	
LIVESTOCK	McG-14	As necessary, BLM will cause livestock redistribution by rotating access to water supplies, provided that restricted supplies are not needed by wildlife.	X	
LIVESTOCK	McG-15	Implementation of the plan will involve an extensive monitoring program. Results of the monitoring will be used to determine the need for the periodic resting of pastures or the adjustment of stocking levels.	X	

APPENDIX B (CONCLUDED)
SUMMARY OF PREVIOUS DECISIONS

RESOURCE	DECISION NUMBER	DECISION	INCORPORATION: CONTINUING MANAGEMENT GUIDANCE	INCORPORATION: ISSUE/ CONCERN
LIVESTOCK	McG-16	Summer grazing will occur on some units to enable utilization of tobosa, sacaton, and other species which normally are not a primary forage resource, and in so doing, will reduce utilization of key forage species such as black grama.	X	
WILDLIFE	WL-1	Big game forage use: Present deer numbers will increase from an estimated 3,700 to 5,000 and present pronghorn numbers from an estimated 250 to 700 by the year 1992.	X	
CULTURAL RESOURCES	C-8	BLM will begin a plan of action to establish procedures and priorities for conducting a 10 percent Class II cultural resource inventory and will initiate field work to accomplish this goal. (This decision applies to the entire WSRA.)	X	
CULTURAL RESOURCES	C-9	A Cultural Resource Management Plan will be developed for the archaeological sites on McGregor Range. The objectives of the plan will be to protect the cultural resources in the area.	X	

APPENDIX C

MINERALS

APPENDIX C-1

BLM MINERAL RESOURCES POLICY

This statement sets forth BLM policy for management of mineral and energy resources on public land. It reflects the provisions of three important acts of Congress: the mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act (FLPMA) of 1976, and the National Materials and Minerals Policy, Research, and Development Act of 1980. This policy statement represents a commitment by BLM to implement the policies of these statutes consistent with BLM's other statutory obligations.

The Mining and Minerals Policy Act of 1970 declares that it is the continuing policy of the Federal Government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources.

FLPMA reiterates that the 1970 Mining and Minerals Policy Act be implemented and directs that public land be managed in a manner which recognizes the Nation's need for domestic sources of minerals and other resources. FLPMA also provides for improved inventory, planning, and decision processes.

The 1980 National Materials and Minerals Policy, Research, and Development Act restates the need to implement the 1970 act and requires the Secretary of the Interior to improve the quality of minerals data in Federal land use decisionmaking. In April 1982, the President delivered to Congress the first annual report required by the 1980 act, which provided specific guidance to implement these acts.

The BLM recognizes that public land is an important source of the Nation's mineral and energy resouces, some of which are critical and strategic. BLM is responsible for making public land available for orderly and efficient development of these resources under principles of balanced multiple-use management.

The following principles will guide BLM in managing mineral resources on public land:

1. Except for Congressional withdrawals, public land shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is clearly justified in the National interest.

2. BLM actively encourages and facilitates the development by private industry of public land mineral resources in a manner that satisfies National and local needs and provides for economically and environmentally sound exploration, extraction, and reclamation practices.

3. BLM will process mineral patent applications, permits, operating plans, mineral exchanges, leases, and other use authorizations for public land in a timely and efficient manner.

4. BLM's land use plans and multiple-use management decisions will recognize that mineral exploration and development can occur concurrently or sequentially with other resouce uses. The Bureau further recognizes that land use planning is a dynamic process and decisions will be updated as new data are evaluated.

5. Land use plans will reflect geological, energy and mineral values on public land through more effective geology, energy and mineral resouce data assessment.

6. BLM will supervise salable and leasable mineral operations to ensure proper resource recovery and evaluation, production verification, diligence and inspection, and enforcement of the lease, sale, or permit terms. BLM will receive Fair Market Value for mineral commodities where the laws provide.

7. The Bureau will maintain effective professional, technical, and managerial personnel knowledgeable in mineral exploration and development.

These principles will be implemented immediately and further clarified where necessary through specific guidance to the field.

/s/ Robert Burford
Director, Bureau of Land Management

APPENDIX C-2
LEASABLE MINERAL RESOURCES

INTRODUCTION

The oil and gas leasing process begins when an interested party applies for a fluid minerals lease at the BLM New Mexico State Office (NMSO) in Santa Fe. Leases may be acquired competitively through the submission of bids.

In preparation for leasing, the NMSO Mineral Leasing staff reviews land ownership maps to determine availability of Federal interests for leasing. In addition, the maps are examined to determine what lease terms and conditions need to be applied to the subject lands.

LEASE TERMS AND CONDITIONS

A BLM oil and gas and geothermal lease includes the lease terms and conditions which cover subjects such as bonding, rentals and royalties, inspections, and safety. Also covered are protection of the environment, surface resources, and improvements.

The conduct of operations section of the lease contract establishes the general requirements for the protection of surface resources and is referred to herein as the "standard" lease term. It provides authority for the modification to siting, design of facilities, timing of operations, and specification for interim and final reclamation measures to minimize adverse environmental impacts. The standard lease terms specifically require that the lessee contact the lessor prior to disturbing the surface and specify that the lessee may be required to complete minor inventories or short-term special studies.

Special Stipulations

Special stipulations are conditions of lease issuance which the local office of the BLM or other agency, in this case the Army, provide for additional and more stringent environmental protection by allowing for denial of operations within the terms of the lease contract. Without special stipulations, proposed operations can be modified but not denied (except under certain specific, nondiscretionary statutes). Special stipulations will be used whenever mitigating measures deprive a lessee of basic lease rights. Because of this effect on lease rights, lessees must be aware of and acknowledge all special stipulations prior to acceptance of a lease offer by BLM.

BLM policy is that the use of special stipulations should be considered appropriate only when they are both necessary and justifiable. The contractual controls existing in the lease (the standard terms, regulations, and formal operational orders) provide substantial latitude within which the BLM may require modification of the siting, design and timing of operations on leaseholds, and interim and final reclamation measures. They do not, however, allow the BLM to require modifications to proposed operations that would prevent economic extraction of otherwise commercial deposits of oil and gas.

A special stipulation is justifiable if there are resources, values, uses, or users present that (1) cannot coexist with oil and gas operations, or (2) cannot be adequately managed or accommodated on other lands for the duration of the operation, and (3) would provide greater benefits to the public than those of oil and gas operations.

The existing and proposed fluid leasing stipulations to be used in the alternatives follow in this appendix.

The analysis of potential impacts on fluid leasing, by alternative, was done on an interdisciplinary basis. The rationale through which stipulations were assigned consisted of consideration of the resource value, consideration of the fluid mineral potential, and a determination as to which constraints could afford maximum protection while allowing for fluid mineral development.

Public land may be affected by discretionary and nondiscretionary closures which are presented in a lease as special stipulations. A discretionary closure includes those lands where the BLM has determined that oil, gas, or geothermal leasing,

even with the most restrictive stipulations (including No Surface Occupancy for the entire leasehold), would not adequately protect other resources values or land uses. Nondiscretionary closures include those lands that must be closed to oil, gas, or geothermal leasing for reasons beyond the discretion of the BLM. These are lands specifically precluded from oil and gas mineral leasing by law, regulations, Secretarial or Executive Order, or that have been otherwise formally closed by decisions reached beyond the scope of the BLM. McGregor Range is excluded from leasing by a nondiscretionary closure.

New leases for lands in McGregor Range will contain the special stipulation or stipulations designated in the selected alternative.

Activities normally deferred to activity planning, or other planning completed subsequent to the Plan Amendment, include drill site location; field development and facility layout plans; unitization and communitization plans; transportation, power or pipeline routing plans (other than for major designated corridors); and others. Many of these activities are addressed after an Application for Permit to Drill (APD) is received.

All future geophysical exploration, leasing, and development proposals are to be reviewed for conformance with the Plan Amendment and with the Army to ensure the availability of land for these activities and to ensure compliance with applicable mitigating measures as identified in the Plan Amendment and subsequent MOU. In certain cases geophysical exploration may be restricted or excluded. Any site-specific reviews required by operating orders, regulations, or to ensure NEPA compliance will also be performed at appropriate times.

Existing Fluid Leasing Stipulations

The following stipulations may be utilized for leasing on McGregor Range as modified to fit the particular situation.

No occupancy or other activity on the surface of the following described lands is allowed in order to protect their value as ecological study plots and demonstration areas:

* * * * *

Vehicular use on all or portions of the lands contained in this lease is limited to existing roads and trails in order to prevent damage to cultural resources. Exceptions may be granted when the lessee/operator submits a surface use and operations plan which is satisfactory to the authorized officer of the Bureau of Land Management, for the protection of cultural resources.

* * * * *

No occupancy or other activity on the surface of the following described lands is allowed in order to protect sites listed on the State Register of Historic Places and sites nominated to the National Register of Historic Places:

* * * * *

No drilling or storage facilities will be allowed within 500 feet of sites on the leased lands which are listed on the State Register of Historic Places and sites proposed for nomination to the National Register of Historic Places. This distance may be modified when specifically approved in writing by the authorized officer of the Bureau of Land Management, with the concurrence of the State Historic Preservation Officer.

* * * * *

No occupancy or other activity on the surface of the following described lands is allowed in order to protect recreational opportunities.

* * * * *

No occupancy or other activity on the surface of the following described lands is allowed in order to protect the scenic quality.

* * * * *

The lessee is given notice that all or part of the lease area contains special values, are needed for special purposes or requires special attention to prevent damage to surface resources. Any surface use or occupancy within such areas will be strictly controlled. Use or occupancy will be authorized only when the lessee/operator demonstrates that the area is essential for operations and when the lessee/operator submits a surface use and operations plan which is satisfactory to the Bureau of Land Management for the protection of these special values and existing or planned uses. Appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the Bureau of Land Management has been advised of the proposed surface use or occupancy

on these lands, and on request of the lessee/operator, the Bureau of Land Management will furnish further data on such areas.

Reason for Restriction:

To protect recreation and public purpose facilities authorized under the Recreation and Public Purposes Act.

Duration of Restriction: Year-round

Prior to acceptance of this stipulation the prospective lessee is encouraged to contact the Bureau of Land Management for further information regarding the restrictive nature of this stipulation.

* * * * *

No occupancy or other activity on the surface of the following described lands is allowed in order to protect communication and radio facilities:

* * * * *

The lessee is given notice that all or part of the lease area contains special values, are needed for special purposes or requires special attention to prevent damageto surface resources. Any surface use or occupancy within such areas will be strictly controlled. Use or occupancy will be authorized only when the lessee/operator demonstrates that the area is essential for operations and when the lessee/operator submits a surface use and operations plan which is satisfactory to the Bureau of Land Management for the protection of these special values and existing or planned uses. Appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the Bureau of Land Management has been advised of the proposed surface use or occupancy on these lands, and on request of the lessee/operator, the Bureau of Land Management will furnish further data on such areas.

Reason for Restriction:

To protect the threatened and endangered species habitat.

Duration of Restriction: Year-round

Prior to acceptance of this stipulation the prospective lessee is encouraged to contact the Bureau of Land Management for further information regarding the restrictive nature of this stipulation.

* * * * *

In order to minimize damage to watersheds classified as having critical erosion potential, off-road vehicular use of other surface disturbance on all or portions of the lands contained in this lease will be allowed only when specifically approved in writing by the authorized officer of the Bureau of Land Management.

* * * * *

In order to minimize disruption of critical seasonal wildlife habitat (antelope fawning ground), surface disturbing activities will be allowed only during the period June 15 to April 15. This does not apply to maintenance and operation of producing wells. Exceptions to this limitation in any year may be specifically authorized in writing by the authorized officer of the Bureau of Land Management. Lands within leased area to which this stipulation applies are described as follows:

* * * * *

<u>Fort Bliss Proposed Special Stipulations For Oil and Gas Leasing</u>

Conflict of Stipulation	1. If the provisions of these stipulations conflict with any other provisions of the lease contract, the provisions of the Standard and Special Stipulations by Commander, Fort Bliss, shall prevail.
General Entry and Operating Condition	2. The lessee is hereby made aware that any use of or activity on the leasehold requires prior approval from the BLM. However, all such approvals will require the concurrence of the installation commander or authorized representative and as such shall include requirements deemed necessary by the installation commander or authorized representative. These requirements may include but are not limited to prohibitions and specifications on use of existing access routes to installation lands (e.g. gates, roads, and maintenance

thereof), use and protection of installation water supply, safety measures (e.g. limiting or prohibiting use of explosives, safe working distances from ammunition restricted areas), fire protection measure (e.g. construction and maintenance of firebreaks), use of communication and transportation systems, matters of installation security (e.g. authorized hours of operation, worker identification), fencing and size of the operating area, abandonment and plugging of all wells drilled, reclamation measures for operating areas and access routes (e.g. topsoil, reseeding, fertilizing). Compliance with these requirements will be at no cost to the United States. The installation commander for the purpose of this lease is Commander, US Army Air Defense Artillery Center and Fort Bliss (CDR, USAADACEN&FB). Such conditions will be required only insofar as they protect the interests of the United States.

High Explosive Area

3. The lessee is hereby made aware that the installation mission currently prohibits drilling in certain areas and certain safe distances from those determined by the Department of Defense. Furthermore, the lessee is hereby made aware that a future increase in production, testing or storage requirements of ammunition or explosives may further restrict the surface area available for existing operations. The following figures were determined by reviewing AR 384-64, TM 9-1300-206, and coordination with the local Ammunition Storage Supply Point (ASSP). No lease operations will be permitted within 2,000 feet of the outer containment area, training facilities, aircraft training sites, firing points, and no closer than 3,970 feet from the fence line of any ASSP.

Third Party Interests In Land

4. Before beginning to drill, the lessee must consult with third parties authorized to use real estate in the leased area and must consider program's for which third parties have contractual responsibility. On the request of the BLM District Manager, the installation commander may seek to resolve disputes between the lessee or operator and parties holding surface rights (e.g. leases, easement), if they cannot reach agreement. Resolutions will be coordinated with contracting officers or representatives of all parties involved.

Repair of Damage or Degradation of Property

5. The lessee shall bear all costs for damages or degradation of installation facilities caused by the lessee's or the operator's activities and of clean-up of pollutant spills caused by such activities. Where conditions of urgency exist as determined by the installation commander and time is of the essence, the lessee shall repair damages or degradation of installation facilities caused by the lessee's or operator's activities and clean-up pollutant spills caused by such activities, and such repair and clean-up shall be accomplished in a timely fashion in the manner specified by the installation commander. The installation commander shall confirm verbal orders to the lessee or operator in writing. The lessee or operator shall confirm its verbal response in writing. If the lessee or operator cannot or will not

comply, the installation commander will act to have the repair or clean-up accomplished and the lessee shall be liable to reimburse the Army for any and all costs of such action, including administrative costs.

Cessation of Operation

6. The Secretary of the Army or designee reserves the right to acquire cessation of operations if a national emergency arises with lease operations. On approval from higher authority, the commander will give the lessee written notice or, if time permits, request the BLM to give notice of the required suspension. The lessee agrees to this condition and waives compensation for its exercise.

Reimbursement for Services Performed

7. The lessee or operator shall reimburse the installation commander for any and all costs incurred by the installation in assisting the lessee (e.g. monitoring compliance with safety, security, and other lease requirements; relocation of explosives at the lessee's request to facilitate drilling). Such costs are not expected to exceed $5,000 (except relocations) in any one year, although the lessee will reimburse all reasonable costs. Such costs will not be charged to the lessee for facilities transporting oil or gas solely to the installation.

Option to Purchase Oil and Gas

8. The United States reserves the option of purchasing up to 50 percent of the working interest portion of any oil or gas production from any wells at the market price at the wellhead under a utility service contract pursuant to AR 420-41 and related publications or their successor publications. If the installation commander or other authorized representative of the United States decides to exercise this option, such person shall give the operator 4 months notice beginning on the date of the operator's receipt of such notice. The lessee or operator shall include this stipulation in any contract or sale of oil or gas to other parties.

Equivalent Delivery, Salvage, and Purchase Price

9. If the option in the above stipulation is exercised, the lessee shall bear all costs of refining or processing and delivering marketable oil or gas to the installation or of equivalent delivery of oil or gas produced off the installation if prescribed by the installation commander or authorized representative of the United States. The lessee or operator shall bear the cost and be responsible for maintaining all refining or processing and delivery facilities, including meters, during the producing life of the well. When production is ended, the lessee or operator shall salvage such facilities. The lessee or operator shall bill the United States for gas or oil purchased. Market price at the wellhead shall be the lowest price paid by the wholesale gas buyer purchasing gas excess to the needs of the United States, if such buyer is fully independent from the seller and the transaction is an "arm's length" transaction; otherwise standard appraisal methods will be used.

Procedures and Fixtures For Delivery

a. In the case of gas, the lessee or operator within 4 months of written notice shall at no cost to the United States arrange for equivalent delivery or construct a complete automatic gas supply system from the well to the existing

installation gas system according to a plan specifying routing, materials and workmanship and approved by the installation commander. A complete pipeline includes all necessary piping, valves, meters, regulators, fittings, compressors and odorizers.

Inspection Calibration and Independent Audit

b. In all cases, the lessee or operator shall perform routine scheduled equipment inspection and meter calibrations with representatives of the installation commander. The installation commander may require annually or more often that the lessee or operator engage and independent party which is acceptable to the installation commander, to test the accuracy of all meters and to furnish a written report on its findings to the installation commander.

Multiple Lessee Cooperation

c. If exercise of the option involves more than one lessee or operator, the lessee or operator agrees to cooperate with other lessees or operators in scheduling production, constructing pipelines from wells or gathering points to the Government's distribution system, sharing expense and other matters to assure a timely and continuous oil or gas supply to the United States.

Damage to Lessees' Property

10. The United States shall not be responsible for damages to the property of the lessee or for injuries to the person or the lessee (if an individual), or for damages to the property or injuries to the person of the lessee's officers, agents, servants or employees or others who may be on the leased premises at their invitation or the invitation of any of them arising from or incident to any governmental activities; and the lessee shall hold the United States harmless from any and all such claims.

Imminent Danger

11. If the commander or the commander's authorized representative discovers an imminent danger to safety or security which allows no time to consult the BLM, that person may order such activities stopped immediately. The authorized officer of the BLM District Manager will be notified immediately, will review the order, and will determine the need for further remedial action.

Contamination of Property

12. If contamination is found in the operating area, the operator shall immediately stop work and ask the commander or the commander's representative for help.

Geophysical Testing and Reporting

13. The lessee shall obtain a separate license to conduct geophysical tests on the leased area from the installation commander or the District Commander, U.S. Army Corps of Engineers, Albuquerque, NM and shall furnish a copy of all data and information obtained from these tests to the BLM. The lessee shall not occupy the surface of the leasehold for any purpose, except for exploration in accordance with this stipulation.

Plugging and Restoration Requirements

14. If the drilling does not result in a producing well, the hole shall be plugged in accordance with all State or Federal laws and regulations and the area returned for Fort Bliss use. In the event a producing well is later abandoned, the lessee or operator shall plug the well, remove its facilities and restore all grounds to their original condition, including

topsoil, seeding and fertilizing. The plugging of all wells, both dry holes and depleted producers, shall be accomplished in accordance with plugging programs approved by the Bureau of Land Management or other Federal Agencies, pursuant to the applicable Oil and Gas Operating Regulations in 30 CFR 221 or elsewhere. In the event that the State of Texas or New Mexico, as appropriate, requires plugging requirements beyond those contemplated in Federal Regulations, the lessee may be required to meet the higher standards imposed by the State.

Regulation of Lessee

15. The Commander will have the right to regulate the operations of the lessee to prevent any security, fire or safety violations. The lessee or operator shall be required to clear and maintain fire breaks around drilling sites, roads, fences, pipelines, and other installations as the Commander deems necessary.

Pooling

16. The lessee agrees and understands that no unitization or pooling of any leased tract herein shall occur without the prior express approval and consent of the United States of America.

Historic and Environmental Survey Funding

17. Lessee will fund a field survey and any required mitigation necessary to locate and protect historic properties and other environmental values that are covered by law or regulations. No land disturbing activities will be conducted prior to completion of appropriate survey and mitigation efforts. Commander, Fort Bliss, will administer and coordinate all such surveys and mitigation efforts.

18. Lessee or operator understands that in addition to Special Stipulation number 7 subject tract(s) may contain Research Natural Areas, wildlife water resources, ecological control sites, and sensitive/unique wildlife habitat/ecosystems, any and all of which require restrictions of surface use. Commander, Fort Bliss, and/or Bureau of Land Management, New Mexico State University, State of New Mexico will specify limitations.

Conflict of Stipulation

19. If the provisions of these stipulations with any other provisions of the lease contract, the provisions of the Standard and Special Stipulations by Commander, Fort Bliss, Texas, shall prevail.

Limitations in Maneuver Areas

20. Lessee or operator under-understands that tract number _____ is located in a maneuver area for heavy trucked vehicles weighting up to 125,000 pounds. Drilling can be permitted but any improvements in connection with a producing well must be underground in a concrete reinforced bunker which will support above weights or located approximately _____ miles laterally from the tract. In addition, lessee or operator must show to the satisfaction of the installation commander that mineral operations will not interfere with training or the operations will not be approved. Production facilities may be required to be located either on or off of Government property.

Directional Drilling

21. Lessee or operator under-understands that directional drilling will only be permitted on tract number _____. Drilling rig site may be

required to be either on or off of Government property.

Evacuation Requirements Within Missile Firing Ranges

22. Lessee or operator understands that tract number _____ is located in a a missile firing range area or safety danger zone. During periods of missile firing, Commander, Fort Bliss, will require the evacuation of all personnel. Directional drilling will be permitted within this area with the same stipulations as Stipulation 3 above. Certain periods of the year, missile firing can occur daily, but normally firing is scheduled once or twice a week. Evacuations will be at no expense to the Government. Refer to Standard Stipulation 10, concerning damage to lessee's property and the "hold harmless" clause which pertains in this section.

Scatter Debris Area/One Mile Safety Zone

23. Lessee or operator understands that tract number _____ is located within a permanent scatter debris area or within 1 mile safety zone. This area will not be utilized for directional drilling due to heavy contamination with unexploded ordnance and missile fragments both on and below the surface. No plans are being considered for decontaminating this area in the future. The lessee or operator will not be permitted to occupy this area for any purpose. Tracts located on the boundaries of the scatter debris area and 1 mile safety zone must meet the requirements for slant drilling.

Contaminated Land

24. Lessee or operator understands that tract number _____ is in an area contaminated by unexploded duds both on and below the surface. Lessee or operator will not be permitted to occupy surface for any purpose. Slant drilling will be required. Drilling rig site and production facilities may be required to be located either on or off of Government property.

BLM Grazing Unit

25. Tract number _____ is in a Bureau of Land Management (BLM) managed grazing unit and additional BLM stipulations may apply.

U.S. Forest Service Land

26. Tract number _____ is within the Lincoln National Forest boundary and additional U.S. Forest Service stipulations may apply.

Limitations on Research, Study Sites and Wildlife Resources

27. Lessee or operator understands that tract number _____ contains one or more of the following:

a. Research natural areas,

b. Wildlife water resources,

c. Grassland control sites,

d. Erosion study sites,

all of which require restrictions of surface use. Commander, Fort Bliss and/or Bureau of Land Management, New Mexico will specify limitations.

Laser Danger Area

28. Lessee or operator understands that tract number _____ is located in an area of extensive laser operations which will require evacuation to a safe area or eye protection as specified by the Army during laser operation. During certain classified live firing and laser operations, it may be necessary to order evacuation of all personnel from these tracts.

APPENDIX D

RECREATION

APPENDIX D

RECREATION OPPORTUNITY SPECTRUM INVENTORY AND EVALUATION PROCESS

The Recreation Opportunity Spectrum (ROS) provides a framework for inventory planning and management of the recreation resource. The ROS recognizes that people differ in their needs and the experience they desire. Also, the resource base is not uniform; it varies with its potential for providing recreational experiences (i.e., recreational opportunities available on Elephant butte Reservoir are not the same as those available in the Cornudas Mountains). The ROS allows managers to characterize all possible combinations of recreational opportunities and resources and arrange combinations of activity, setting, and experience opportunities along a continuum. Once these opportunities are provided and are able to assess the impacts of other resource actions in the recreation resource.

To facilitate its use in planning, the ROS is divided into six classes which are defined in a combination of activity, setting, and experience opportunities. Evaluation of ROS classes is based upon their application against specific criteria. These are:

1. Remoteness. The distance the area is from the roads.

2. Size. The size of an area provides a partial measure of the opportunity to experience feelings of isolation and self-reliance.

3. Evidence of Human Use. The extent to which the natural scenery has been modified by land treatments or construction of structures.

4. Social Setting. The number and types of contacts between recreationists.

5. Managerial Setting. The type and extent of facilities provided to support recreation use and the type of restrictions imposed on recreationists by the managing agency.

Using this system, the predicted impacts of each proposal are anticipated and extreme impacts to the recreation resource are mitigated through the planning and design stage. For a more thorough discussion of the ROS procedures, see BLM Manual, Section 8320.

THE RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity a/
Primitive	Opportunity for isolation from the sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills.	Area is characterized by an essentially unmodified natural environment of fairly large size. Concentration of users is very low. Only facilities essential for resource protection are used. Spacing of groups is informal and dispersed to minimize contacts between groups. Motorized use within the area is not permitted.	Camping Hiking Climbing Enjoying Scenery or Natural Features Nature Study Photography Horseback Riding Spelunking Hunting (big game, small game, upland bird, waterfowl)
Semiprimitive Nonmotorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low and on-site restrictions are subtle. Facilities are provided for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contacts between groups. Motorized use is not permitted.	Ski Touring and Snowshoeing Swimming Diving Fishing Canoeing Sailing River Running (nonmotorized craft)
Semiprimitive Motorized	Some opportunity for isolation from the sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Explicit opportunity to use motorized equipment while in the area.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low and on-site restrictions are subtle. Facilities are provided for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contacts between groups. Motorized use is permitted.	Same as the above, plus the following: Off-Road Vehicle Use (4-wheel drive, dune buggy, dirt bike, snowmobile) Power Boating
Roaded Natural	About equal opportunities for affiliation with other groups and for isolation from the sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important. Practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present.	Area is characterized by a generally natural environment. Resource modification and utilization practices harmonize with the natural environment. Concentration of users is low to moderate. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities.	All activities listed previously plus the following: Picnicking Rock Collecting Wood Gathering Auto Touring Downhill Skiing Snowplay Ice Skating Water Skiing and Other Water Sports Hang Gliding Interpretive Use Rustic Resorts and Organized Camps
Rural	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are unimportant.	Area is characterized by a substantially modified natural environment. Resource modification and utilization practices are obvious. The concentration of users is often moderate to high. A considerable number of facilities are present. Facilities are often provided for specific activities and are designed for moderate to high use. Facilities for intensive motorized use are available.	All activities listed previously plus the following: Competition Games Spectator Sports Bicycling Jogging Outdoor Concerts Modern Resorts
Modern Urban	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment and the use of outdoor skills are largely unimportant.	Area is characterized by a highly modified environment. Vegetation is often exotic and manicured. Sights and sounds of man, on-site, are predominant. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of large numbers of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.	All activities listed previously.

Source: BLM Las Cruces District Office Files, 1984

Note: a/This listing of activity opportunities is provided for illustrative purposes. It is not an all-inclusive list of activity opportunities on McGregor Range.

APPENDIX E

VISUAL RESOURCES

APPENDIX E
VISUAL RESOURCES

DETERMINATION OF VRM CLASS RATINGS

Visual resource classes are categories assigned to public land which serve two purposes: (1) an inventory tool that portrays the relative value of the visual resources and (2) a managment tool that portrays management objectives.

Ratings from scenic quality classes, visual sensitivity levels, and distance zones are combined to form VRM classes (see Map 3-9). A VRM class identifies the suggested degrees of human modification that should be allowed in a certain landscape from a visual resource standpoint.

Scenic quality classes are rated for landform, water, color, vegetation, intrusions, and uniqueness. These elements are combined, and the area is classified as Class A - unique, outstanding features; Class B - outstanding features common to the physiographic region; or Class C - features common to the physiographic region.

Sensitivity levels are determined on the basis of frequency of travel through an area, use of area, and public knowledge of the area. These elements are rated and the area is assigned a high, medium, or low sensitivity level.

Distance zones are placed in three categories: foreground/middleground zone, background zone, and seldom seen zone. The foreground/middleground zone is closest to the viewer and requires more attention and consideration in management decisions because of the great detail that can be seen in the landscape. The background and seldom seen zones are viewed in less detail by the observer and most impacts blend with the landscape because of the distance.

CRITERIA FOR VRM CLASSES

After class ratings are completed for scenic quality, visual sensitivity, and distance zones, areas are assigned to one of four management classes. These classes are designed to maintain or enhance visual quality and describe the different degrees of modification to the basic elements of the landscape allowed.

CLASS I: Those areas where a management decision has been made previously to maintain a natural landscape (e.g. wilderness areas, wild sections of National Wild and Scenic Rivers, and other Congressionally or administratively designated areas).

CLASS II: Landscapes with Class A scenic quality, or Class B scenic quality in the foreground/middleground zone with high visual sensitivity. Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape.

CLASS III: Landscapes with Class B scenic quality and high visual sensitivity in the background zone, or with Class B scenic quality and medium visual sensitivity in the foreground/middleground zone or with Class C scenery of high visual sensitivity in the foreground/middleground zone. Changes in basic elements (form, line, color, texture) caused by management activity may be evident in the characteristic landscape; however, the changes should remain subordinate to the visual strength of the existing character.

CLASS IV: Landscapes with Class B scenic quality and high visual sensitivity in the seldom seen visual zone, or with Class B scenic quality and medium or low visual sensitivity in the background or seldom seen zones, or with Class C scenery quality (except with high sensitivity in the foreground/middleground zone). Changes may subordinate the original composition and character but must reflect what could be a natural occurrence within the characteristic landscape.

MANAGEMENT AND CONTRAST RATING OBJECTIVES FOR VRM CLASSES

For activities proposed on public lands, impacts are evaluated with the visual resource contrast rating system, a method of evaluating the visual

contrast of a proposed activity with the existing landscape character.

The amount of contrast is measured by separating the landscape into its major features (land and water surface, vegetation, and structures) and then predicting the magnitude of change in contrast of each of the basic elements (form, line, color, and texture) to each of the features. Assessing the amount of contrast for a proposed activity in this manner will indicate the severity of impact and serve as a guide in determining what is required to reduce the contrast so it will meet the visual management class requirements for the area. Objectives for the VRM classes are listed below:

CLASS I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

CLASS II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

CLASS III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

CLASS IV: The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

APPENDIX F

VEGETATION

APPENDIX F
VEGETATION

C.A. #NMSO-100

COOPERATIVE AGREEMENT
Between
THE BUREAU OF LAND MANAGEMENT

U.S. ARMY AIR DEFENSE CENTER, FORT BLISS
and
NEW MEXICO STATE UNIVERSITY
for PRESERVATION OF STUDY SITES ON
McGREGOR RANGE (FORT BLISS)

I. Authority

In accordance with the authority contained in Federal Land Policy and Management Act, P.L. 94-579, October 21, 1976, (90 Stat. 2744, 43 U.S.C. 1701, et seq.), the use of Cooperative Agreements is authorized, and the Department of Defense, the Department of Interior, and Board of Regents of New Mexico State University, through their designated representatives whose signatures appear below, approved the following cooperative plan for the protection, development, management, enhancement, and systematic inventory of three highly productive black grama grassland areas of McGregor Range.

II. Definitions

Hereinafter in the agreement, the following will apply:

1. The Bureau of Land Management will be referred to as the "Bureau."

2. The U.S. Army Air Defense Center and Fort Bliss will be referred to as the "Center."

3. New Mexico State University will be referred to as "NMSU."

III. Purpose

It will be the purpose of this Cooperative Agreement to provide for a general inventory review of the flora and fauna of three grassland areas, to protect and preserve the areas, to determine ecological changes, and to report causes and effects of the changes by the use of accepted fundamental techniques. The inventory, when completed, will be attached and made a part of this agreement.

Portions of the McGregor Range include some of the most outstanding examples of black grama grassland in the United States. Such grassland was once commonplace in the southwest and provided a major forage resource for wildlife and livestock. Grassland ecosystems in virtually ungrazed state are very rare today in southern New Mexico.

Preservation of these areas will provide sites where natural ecosystem processes can be monitored in black grama grasslands of pristine condition. They can serve a bench marks for comparison of managed or impacted black grama lands. The effects of livestock grazing on other lands can be assessed by measuring populations of grama and other desirable forage grasses as departures from populations in the ungrazed areas. They will provide a natural laboratory for studies of ecosystem processes responsible for maintaining productivity in black grama grasslands. The sites will serve as a refuge for populations comprising the natural, self-maintaining diversity of black grama grassland.

IV. Description of the Areas Covered by this Agreement

The proposed areas are all located on McGregor Range outside current grazing units. The sites are as follows:

Site A. A narrow strip paralleling State Road 506 to the north. The north boundary is the fence, approximately 470 m north of the road; the south boundary is the fence paralleling the road. The linear distance along the orad is more or less 7,420 m (4 miles).

NW boundary coordinates: 13SDF238954
SE boundary coordinates: 13SDF303935

The tract includes portions of Sections 10, 11, 12, and 13 in T. 21 S., R. 11 E., and Section 17 and 18 in T. 21 S., R. 12 E.

Site B. Peninsular portion, generally along the 5,240 foot contour at the western edge of the Otero Mesa escarpment near the head of Rough Canyon and north of Hay Meadow Canyon. The east boundary is the fence of Grazing Unit 12.

NW boundary coordinates: 13SDF186851
SE boundary coordinates: 13SDF215818

The tract includes portions of Sections 7, 17, and 20 in T. 22 S., R. 11 E.

Site C. Peninsular portion along the 5,240 foot contour at the western edge of the escarpment about 200 m north of Martin Canyon. East boundary is along the fence.

NW boundary coordinates: 13SDF197782
SE boundary coordinates: 13SDF196751

Site D. Peninsular portions along the 5,300 foot contour, more or less, at the western edge of the Otero Mesa escarpment commencing about 3,000 m south of Martin Canyon, thence south about 600 m. East boundary is along the fence of Grazing Units 10 and 11.

NW boundary coordinates: 13SDF192697
SE boundary coordinates: 13SDF205636

The tract includes portions of Section 31, T. 23 S., R. 11 E., and 6, 7, and 18, in T. 24 S., R. 11 E.

The total land involved in all of these sites is a little over 6 section.

V. Working Agreement

All parties to this Agreement will be concerned with the protection, preservation, study, and reporting of research, and the continuation of the ecosystem processes without undue disturbance.

A. The Bureau agrees to:

1. Contact NMSU prior to construction of any facilities within these study sites.

2. Continue to exclude livestock from the study sites.

3. Discourage all activities which will cause disturbance to the vegetative cover and soil surface of the study sites.

B. The Center agrees to:

1. Contact NMSU prior to construction of any facilities within these study sites.

2. Cause as little disturbance to the vegetative cover and soil surface as is practically possible during activities such as drone retrieval and fire control.

C. NMSU agrees to:

1. Contact the Center prior to entry onto the site.

2. Not construct any improvements.

3. Furnish the Bureau and Center copies of the data and reports resulting from research or study.

4. Limit the use of the sites for research or study and investigations to advanced students and qualified professionals.

This agreement will in no way impose any controls over the Center with regard to access and continued use as established in the procedures for governing security and military operations.

This agreement shall become effective upon the date of approval by all three parties concerned and shall continue in effect indefinately or until a desire to terminate it is served on any of the signatory parties by another.

Recommended for approval:

David C. B. Rathbun	June 7, 1978
District Manager Las Cruces District Bureau of Land Management	Date

Approved:

Arthur W. Zimmerman	July 15 1978
State Director New Mexico State Office Bureau of Land Management	Date
William H. Lewis	14 July 78
U.S. Army Air Defense Center and Fort Bliss	Date
G. C. Rosch	31 July 78
New Mexico State University Board of Regents	Date

APPENDIX G

DESCRIPTION OF SIKES ACT PROGRAM

APPENDIX G

DESCRIPTION OF SIKES ACT STAMP PROGRAM

The Sikes Act Stamp program involves a sportsman fee for public land use established through authority of the Sikes Act, Public Law 86-797 of September 15, 1960 as amended. The latest amendment is dated October 27, 1986. The Sikes Act has two sections; one dealing with public land, the other with military reservations. New Mexico is currently testing a small scale Sikes Act Stamp program, under the public land title of Sikes Act, in areas adjacent to McGregor Range. In both cases, the act provides authority for the State game department/game commission in cooperation with the agencies involved to establish a special fee to finance the management of fish and wildlife specifically on land the program was established for. In other words, the money cannot be spent on land not covered by the stamp program. In the case of military reservations, the money must be spent on the reservation. The money is spent by the game and fish agency and cooperation agencies for protection, conservation, and management of fish and wildlife including habitat improvement and related activities. All money collected would remain available until spent for these purposes.

For McGregor Range, selection of the applicable section of the Sikes Act is a gray area. McGregor Range is technically public land operated under FLPMA with the exception that military activities are the dominant uses. In this situation, Section 2 of Sikes Act dealing with public land would appear to apply. However, McGregor Range is within a designated Military Reservation where Section 1 of Sikes Act would apply. A 1987 opinion from the BLM Field Solicitor suggests that Section 1 for Military Reservations should be used.

Section 1 of the act specifies that a stamp program may be established in accordance with a "cooperative plan" between the Secretary of Defense, Secretary of Interior, and the state game agency. Section 3 of PL 99-561, the 1986 amendment to Sikes Act, states that priority be given to contracting for implementation and enforcement services with Federal and State agencies having responsibility for conservation of fish and wildlife. The Military Lands Withdrawal Act of 1986 (PL 99-606) which withdrew McGregor Range specifically gives responsibility for protection of wildlife and wildlife habitats to the BLM. Therefore, BLM Habitat Management Plans, which on unwithdrawn lands are "comprehensive plans" under Sikes Act, would become the "cooperative plans" on McGregor. The stamp program would operate under these HMPs with regard to Section 1 of Sikes Act. However and separate Game and Fish comprehensive plan may be prepared.

In general, Sikes Act stamp programs would apply to all hunters, trappers, and fishermen (if any) using McGregor Range. Those persons would be required to pay a fee prior to engaging in any of those activities on the Range. The fee would presumably be established by the State Game Commission with concurrence of the New Mexico Department of Game and Fish (NMDGF), Fort Bliss, and the BLM. Enforcement authority lies with NMDGF but may be delegated as a co-authority to the Army and/or BLM through the cooperative plan.

GLOSSARY

GLOSSARY

ACRE-FOOT. The amount of water that will cover one acre of land to a depth of one foot (325,851 gallons or 43,560 cubic feet).

ACTIVITY PLAN. Site-specific plan which precedes actual development. The most detailed level of BLM planning.

AIR-DRY WEIGHT. The weight of a substance after it has been allowed to dry to equilibrium with the atmosphere.

ALLUVIAL FAN. A fan-shaped accumulation of disintegrated soil material; water deposited and located in a position where the water departs from a steep course to enter upon a flat plain or open valley bottom.

ALLUVIUM. Material, including clay, silt, sand, gravel, or similar unconsolidated sediments, deposited by a stream or other body of running water.

ANIMAL UNIT (AU). Considered to be one mature cow (1,000 pounds) or its equivalent based upon average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM). The amount of food or forage required by an animal unit for one month.

ANNUAL PLANT SPECIES. A plant that completes its life cycle and dies in 1 year or less.

APPARENT TREND. The direction of change in rangeland condition over time.

AQUIFER. A water-bearing unit of permeable rock or sediment which is capable of yielding water to wells.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ARROYO. Intermittently flooded drainages.

ARROYO RIPARIAN. Intermittently flooded drainages having vegetation differing from surrounding uplands due to increased water availability.

ASPECT (FORESTRY). The direction that a slope faces.

ASPECT SPECIES. A vegetation species that appears to be dominant in the landscape, although it may be only a small percent of the total vegetation composition.

BASAL AREA. The area of ground surface covered by the stem or stems of a range plant, usually measured 1 inch above the soil, in contrast to the full spread of forage.

BEDROCK. The solid rock underlying the soil, underlying the unconsolidated alluvial deposits, or appearing at the surface where soil is absent.

BIOMASS. The total quantity of living organisms of one or more species per unit of space (called species biomass) or of all the species in a community (called community biomass).

BOLSON. A flat-floored desert valley that drains toward a playa or central depression.

BROWSE. (noun) That part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption. (verb) To consume browse.

BROWSERS. Animals which feed primarily on browse.

CALCAREOUS SOIL. Soil containing sufficient free calcium carbonate or calcium magnesium carbonate to bubble visibly when treated with cold 0.1N hydrochloric acid.

CALCIC HORIZON. A layer of secondary accumulation of carbonates, usually with calcium or magnesium in excess of 15 percent calcium carbonate equivalent and containing at least 5 percent more carbonate than an underlying later.

CALF CROP. The number of calves weaned from a given number of cows bred, usually expressed in percentages.

CALICHE. A layer in the soil more or less cemented by calcium carbonates ($CaCO_3$), commonly found in arid and semiarid regions.

CAMPSITE. A cultural site type representative of all periods consisting of temporary habitation areas which usually contain a lithic scatter, evidence of fire use, ground stone, and pottery scatter.

CANDIDATE SPECIES. Any species of plant or animal listed in the Federal Register for consideration to be listed as threatened or endangered by U.S. Fish and Wildlife Services (FWS) under the Endangered Species Act.

CANOPY. The space occupied by a plant when viewed from overhead.

CANOPY COVER. Percent of the ground surface occupied by the canopy.

CARRYING CAPACITY. Maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from year-to-year on the same area due to fluctuating weather conditions and forage production. (See Grazing Capacity.)

CLAY. A mineral soil separate consisting of particles less than 0.002 millimeters in equivalent diameter.

CLIMAX VEGETATION COMMUNITY. The final or stable community in a series of successive vegetation states which is self-perpetuating and in dynamic balance with the physical and biotic environment.

CONTROLLED LANDS. Private or State lands within an allotment which are owned or leased by the permittee.

COOL SEASON PLANT SPECIES. A plant that does most of its growing during the early spring and late fall and can set seed at either time.

CO-USE AREA. An area within McGregor Range in which the Department of the Army permits grazing under the supervision of the Bureau of Land Management. Of this area, 271,000 acres are currently grazed.

COVER. Small rocks, litter, basal areas of grass and forbs, and aerial coverage of shrubs that provide protection to the soil surface (i.e., in contrast to bare ground).

COW-CALF OPERATION. A cattle business that sells weaned calves about 9 months of age.

COW YEARLONG (CYL). The amount of forage necessary to sustain one cow for a 1-year period. One CYL equals 12 animal unit months.

CRUCIAL HABITAT. Portions of the habitat of a wildlife population that, if destroyed or adversely modified, would result in a reduction of the population to a greater extent that destruction of other portions of the habitat.

CUESTAS. A hill or ridge with a steep face on one side and a gentle slope on the other.

CULTURAL RESOURCE INVENTORY CLASSES.

Class I--Existing Data Inventory: an inventory study of a defined area designed to provide a narrative overview (cultural resource overview) derived from existing cultural resource information and to provide a compilation of existing cultural resource site record data on which to base the development of the BLM's site record system.

Class II--Sampling Field Inventory: a sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in a manner which will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area. The Class II inventory is a tool utilized in management and planning activities as an accurate predictor of cultural resources in the area of consideration. The primary area of consideration for the implementation of a Class II inventory is a planning unit. The secondary area is a specific project in which an intensive field inventory (Class III) is not practical or necessary.

Class III--Intensive Field Inventory: an intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area. Normally, upon completion of such inventories in an area, no

further cultural resource inventory work is needed. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

DIVERSITY. An attribute of an area which is an expression of both the total number and relative abundance of species, communities, or habitats. Relative abundance can be measured by numbers of individuals, cover, or various other characteristics.

EARTHEN STOCK TANK. Usually a permanent earthen structure for holding water temporarily. These are built in high rainfall runoff areas such as an arroyo, canyon, or swale area.

ENDANGERED SPECIES.

Federally Listed: any species of animal or plant in danger of extinction throughout all or a significant portion of its range.

State (Group I): species whose prospect of survival or recruitment in the State are in jeopardy in the foreseeable future.

State (Group II): species whose prospect of survival or recruitment within the State may become jeopardized in the foreseeable future.

ENVIRONMENTAL ASSESSMENT (EA). A concise public document for which a Federal agency is responsible that serves to: (a) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; (b) aid an agency's compliance with the National Environmental Policy Act (NEPA) when no environmental impact statement is necessary; (c) facilitate preparation of a statement when one is necessary. An EA includes brief discussions of the need for the proposal, of alternatives as required by Sec. 102(2) of NEPA, of the environmental impacts of the proposed action and other alternatives, and a listing of agencies and persons consulted.

ERODIBILITY. The relative ease with which one soil erodes under specified conditions as compared with other soils under the same conditions.

EROSION. The wearing away of land surface by wind, running water, and other geological agents.

EROSION CONTROL STRUCTURES. (or EROSION DIKE.) Usually one large earthen, rock, wire, or cement structure used to hold large concentrated flows of water and release this water is small noneroding amounts.

FECAL ANALYSIS. A technique for determining diet by microscopic examination of fecal material.

FLPMA. Federal Land Policy and Management Act of 1976, which mandated the BLM Wilderness Review. Often referred to and pronounced "FLIPMA."

FORAGE. All browse and herbaceous foods available to grazing animals.

FORAGE RESERVATION. The amount of or percentage of the total forage produced which is designated for a particular use such as livestock grazing, wildlife, or watershed protection.

FORAGE (COMPETITIVE). Plants which are used as food by large herbivores such as cattle, and by large and small wildlife.

FORAGE UTILIZATION. An index of the extent to which forage is used. Utilization classes range from slight (less than 20 percent) to severe (more than 80 percent).

FORAGE YIELD. A measure of plant productivity, expressed as weight per unit area per unit time.

FORB. Any herbaceous nonwoody plant that is not a grass or grass-like plant.

GRASS. Any of a family of plants with narrow leaves, jointed stems, and seed-like fruit.

GRAZER. An animal that feeds on grasses and other herbaceous vegetation.

GRAZING CAPACITY. The maximum livestock stocking rate possible without inducing damage to vegetation or related resources such as watershed. This incorporates factors such as suitability of the rangeland for grazing as well as the proper use which can be made on all of the plants within the area. Normally expressed in terms of acres per animal unit month (Ac/AUM) or sometimes referred to as the total AUMs that are

available in any given area, such as an allotment. Areas that are unsuitable for livestock use are not computed in the grazing capacity. Grazing capacity may or may not be the same as the stocking rate.

GRAZING UNIT. A parcel or parcels of land managed as a unit. A grazing unit may include one or more allotments, but parcels and allotments within most units are contiguous and held by a single licensee.

GULLY EROSION. Removal of soil leading to formation of relatively large channels or gullies cut into the soil by concentrations of runoff.

HABITAT. An area where a plant or animal lives. Sum total of environmental conditions in the area.

HABITAT MANAGEMENT PLAN (HMP). A written and officially approved plan for a specific geographical area of public land which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HEAVY USE. Indicates that 60-80 percent of current year's forage production has been eaten or destroyed by grazing animals.

HERD UNIT. Big game habitat within a defined geographical area designated by the New Mexico Department of Game and Fish for management purposes.

HISTORICAL CULTURAL RESOURCES. Historical cultural resources include all mines, ranches, towns, resorts, railroads, trails, and other evidence of human use from the entrance of the Spanish to 1938.

INTERIOR FENCE. Fences used to divide allotments into pastures or holding areas.

KEY FORAGE SPECIES. Forage species whose use serves as an indicator of the degree of use of associated species.

LESSEE. The recipient of a grazing lease.

LESSOR. The entity issuing a grazing lease; in this report, BLM.

LIGHT USE. Indicates that 20-40 percent of current year's forage production has been eaten or destroyed by grazing animals.

LIMESTONE. A sedimentary rock consisting chiefly (more than 50 percent) of calcium carbonate, primarily in the form of calcite.

LITHIC. A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers, and chips, rather than ground stone.

LITHIC SCATTER. A prehistoric cultural site type where flakes, cores, and stone tools are located as a result of the manufacture or use of the tools.

LOAM. Soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

LONG-TERM IMPACT. Twenty years and beyond; approximately the year 2009.

MAJOR LAND RESOURCE AREA. Large geographic areas of land characterized by particular patterns of soil, climate, water resources, and land use.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. An MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decision making.

MESA. An isolated hill or mountain having abrupt or steeply sloping sides and a level top that is composed of a resistant, nearly horizontal stratum or rock.

MOGOLLON. One of the three major cultural traditions in the American Southwest. It spans a time period of approximately 200 B.C. to A.D. 1200. In the area of McGregor Range the Jornada sequence of the Mogollon is dominant. It is characterized by increasingly complex agricultural practices and habitation patterns as well as increasing trade with other regions.

MODERATE USE. Indicates that 40-60 percent of current year's forage production has been eaten or destroyed by grazing animals.

NATURAL UNIT. An area with a specific, typical pattern of landforms, soild and vegetation.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

OFF-ROAD VEHICLE DESIGNATIONS.

Open--designated areas and trails where off-road vehicles may be operated subject to the BLM operating regulations and vehicle standards.

Limited--designated areas and trails where the use of off-road vehicles is subject to restrictions deemed appropriate by the authorized officer.

Closed--designated areas and trails where the use of off-road vehicles is permanently or temporarily prohibited.

OVERGRAZING. Consumption of vegetation by herbivores beyond the endurance of a plant to survive.

OVERSTOCKING. A condition in which an area is occupied by more than the optimum number of livestock (wildlife, trees, etc.).

PALATABILITY. The relish with which a particular plant species or part is consumed by an animal. The palatability of a plant is usually related to its ecological significance as far as succession is concerned. Highly palatable plants are usually those which are a desirable species and decrease with increasing grazing pressure. Conversely, a low palatability usually characterizes a species which is least desirable and which increases with increasing grazing pressure.

PERENNIAL PLANT SPECIES. A plant that has a life cycle of 3 years or more.

PERENNIAL STREAM. A stream or portion of a stream which flows continuously.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PLANT COMMUNITY. One or more plant species growing in association on a given location or area.

PLAYA. The usually dry and nearly level lake plain that occupies the lowest part of a closed depression.

PREDATOR. An animal that preys on one or more other animals.

PRIA. Public Rangelands Improvement Act (PRIA), Public Law 95-514.

PROPOSED SPECIES. Any species of plant or animal formally proposed by the U. S. Fish and Wildlife Service (FWS) to be listed as threatened or endangered under the Endangered Species Act.

SHERD SCATTER. A Mogollon to historical cultural site type where pot-sherds are concentrated.

PUBLIC LAND. Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- lands located on the Outer Continental Shelf
- lands held for the benefit of Indians, Aleuts, and Eskimos
- lands in which the United States retains the minerals, but surface is private.

RANGE BETTERMENT FUND. The separate account in the National Treasury established by Section 401(b)(1) of the Federal Land Policy and Management Act of 1976, consisting of 50 percentum of all monies received by the United States as fees for grazing livestock on public land.

RANGE SITE. Rangeland that differs in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a

native plant community typified by an association of species that differ from other range sites in the kind or proportion of species or in total production.

RANGE TREND. The direction of change in range condition; it indicates whether range condition is improving, declining, or remaining stable.

RANGELAND CONDITION (ECOLOGICAL). The present state of the vegetation on a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site. Rangeland condition is basically an ecological rating of the plant community.

Four classes are used to express the degree to which the composition of the present plant community reflects that of the climax.

Ecological Condition Class	Percentage of Present Plant Community that is Climax for the Range Site
Excellent	76 - 100
Good	51 - 75
Fair	26 - 50
Poor	0 - 25

RANGELAND CONDITION TREND. The direction of change in rangeland condition.

RANGELAND IMPROVEMENT. Any activity or program on or relating to rangelands which is designed to improve production of forage, change vegetation composition, control patterns of use, provide water, stabilize soil and water conditions, and provide habitat for livestock or wildlife.

RAPTOR. Any predatory bird (such as a falcon, hawk, eagle, or owl) that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

RECREATION OPPORTUNITY SPECTRUM (ROS). Continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities.

RESERVOIR. An artificial lake or pond in which water is collected and stored for range management uses. See dirt tank.

REST. As used in this statement, refers to deferment of grazing on an range area to allow plants to replenish their food reserves.

RIGHT-OF-WAY. An easement or permit which authorizes public land to be used for a specified purpose that generally requires a long narrow strip of land. Examples are roads, powerlines, pipelines, etc.

RIPARIAN VEGETATION. Vegetation which occurs in or adjacent to essential perennial drainage ways or their floodplains.

ROCK ART (PETROGLYPH OR PICTOGRAPH). An Archaic to Modern cultural site type consisting of incised figures such as people, animals, plants, or abstracts on a rock surface.

ROCK SHELTER. A cultural site type representative of all periods consisting of an area protected by an overhanging cliff. Often associated with the same materials as a campsite or rock art.

RUNOFF. A general term used to describe the portion of precipitation on the land that ultimately reaches streams; may include channel and non-channel flow.

SAND. Individual rock or mineral fragments in a soil that range in diameter from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and less than 10 percent clay.

SECTION. One square mile or 640 acres.

SEDIMENT. Solid, clastic material, both mineral and organic, that is in suspension, is being transported or has been moved from its site of origin by water, wind, or ice and has come to rest on the earth's surface.

SEVERE (OR SACRIFICE) USE. Utilization in excess of 80 percent.

SHORT-TERM IMPACT. Ten years or less; approximately the year 1999.

SILT. Sedimentary material consisting primarily of mineral particles intermediate in size between sand and clay.

SLIGHT USE. Indicates that 0 to 20 percent of current year's forage production has been eaten or destroyed by grazing animals.

SOIL. (i) The unconsolidated mineral material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. (ii) The unconsolidated mineral matter of the surface of the earth that has been influenced by genetic and environmental factors including parent material, climate, topography, all acting over a period of time and producing soil that differs from the parent material in physical, chemical, biological, and morphological properties and characteristics.

SOIL ASSOCIATIONS. (i) A group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a geographic region, comparable to plant associations in many ways. (ii) A soil mapping unit in which two or more defined taxonomic units occurring together in a characteristic pattern are combined because of map scale or intermixing of taxonomic units.

SOIL COMPACTION. A decrease in the volume of a soil as a result of compressive stress from livestock trampling as an example.

SOIL DEPTH	Lower boundary in inches.
Very shallow	12
Shallow	12 - 20
Moderately deep	20 - 36
Deep	36 - 40
Very deep	40

SOIL PROFILES. A succession of soil zones or horizons beginning at the surface that have been altered by normal soil-forming processes.

SOIL SERIES. A group of soils having genetic horizons (layers) that, except for texture of the surface layer, have similar characteristics and arrangement in the profile.

SOIL TEXTURE. The relative proportions of sand, silt, and clay in a soil as described by classes of soil texture. Soil textural classes recognized are:

sand	silt loam	silty clay loam
loamy sand	silt	sandy clay
sandy loam	sandy clay loam	silty clay
loam	clay loam	clay

Modifiers placed on textural classes when appropriate are:

gravelly	very cobbly
very gravelly	stony
cobbly	very stony

STOCKING RATE. The number of specified kind and class of animals grazing a unit of land for a specified period of time; may be expressed as a ratio, such as animal unit (AU)/section, acres/AU, or acres/animal unit month.

STORAGE TANK. A permanent water holding structure used to supply water to troughs, pipelines, etc.

SUBSOIL. Refers to the B horizon of soil with distinct profiles. In soils with weak profile development, subsoil can be defined in terms of arbitrary depths or as the soil below the surface soil in which roots normally grow.

SUITABILITY. The adaptibility or usefulness of an area to grazing by livestock or wildlife.

SURFACE RUNOFF. That part of the runoff which travels over the soil surface to the nearest stream channel.

THREATENED SPECIES. Any species likely to become endangered within the forseeable future throughout all or a significant part of its range.

TROUGH. An elongate and wide depression with gently sloping borders.

UTILIZATION. The proportion of a year's forage production that is consumed or destroyed by grazing animals, usually expressed as a percentage.

VEGETATION COMPOSITION. The proportion of the total vegetation cover or weight provided by each species, expressed in percent.

VEGETATION SUBTYPE. See Aspect Species.

VIGOR. The state of health of a plant. The capacity of a plant to respond to growing conditions, to make and store food, produce food, produce seed, or reproduce vegetatively, that is, by stolens or rhizomes.

VILLAGE. A Mogollon to Historical cultural site type consisting of a permanent habitation area containing several types of artifacts and evidence of structures.

VISUAL RESOURCES MANAGEMENT (VRM) CLASSES. VRM Classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objectives for each class.

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III: Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV: Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

WARM SEASON PLANT SPECIES. A plant that does most of its growing during the spring and summer and sets seed in the late summer or early fall. It is normally dormant in winter.

WATERHSHED MANAGEMENT PLAN. Activity plan for the implementation of land management practices, both structural and nonstructural, which restore, maintain, or improve watershed condition.

WATER SPREADER. Usually several small, earthen, rock structures used to slow the water flow and give the runoff a chance to be absorbed by the soils and plants.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDERNESS STUDY AREA (WSA). An area with wilderness characteristics.

WILDLIFE. Includes all species of mammals, birds, molluscs, crustaceans, amphibians, reptiles, or their progeny or eggs which, whether raised in captivity or not, are normally found in a wild state. Feral horses and burros are excluded.

WILDLIFE HABITAT AREA (WHA). A specific geographical area which encompasses, at a minimum, the biological requirements for specific wildlife species having high priority for management.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from some or all of the public land or mineral laws.

YEARLING. An animal approximately 1 year of age. A short yearling is from 9 to 12 months of age and a long yearling is from 12 to 18 months.

ABBREVIATIONS AND ACRONYMS

ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ADC	Animal Damage Control
AUM	Animal Unit Month
EA	Environmental Assessment
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
FWS	U.S. Fish and Wildlife Service
Gpd.	Gallons per day
Gpm	Gallons per minute
HMP	Habitat Management Plan
IMP	Interim Management Policy
MFP	Management Framework Plan
MLRA	Major Land Resource Area
MOU	Memorandum of Understanding
NMDGF	New Mexico Department of Game and Fish
NMSU	New Mexico State University
ORV	Off-Road Vehicle
PMOA	Programmatic Memorandum of Agreement
SHPO	State Historic Preservation Office
SHS	Standard Habitat Site

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